### Top message

Adhering closely to its Corporate Philosophy, the Mitsubishi Rayon Group will continue to fulfill its social responsibility and thereby contribute to a sustainable society and the realization of KAITEKI.



Around the world today, we face multitude of issues. In addition to environmental issues, such as global warming caused by climate change, air pollution, concerns of natural resource and energy depletion, and biodiversity destruction, other issues include rapid population growth, food and water shortages, aging populations with declining birthrates, severely lopsided wealth distribution, human rights abuses, and religious and racial unrest. Of course, there is no way that any one corporation could singlehandedly find solutions to all these issues. Nevertheless, the Group believes that every corporation bears a responsibility to confront such issues and to work to help find needed solutions through its corporate activities. We also believe that pursuing such activities is essential to the survival of any corporation in modern society.

The Group's Corporate Philosophy is "Best Quality for a Better Life." "Best Quality" is not something we insist on only when it comes to products and services. We apply the "Best Quality" standard to the development of personnel and other management resources as well as when dealing with business partners, customers and members of global and local communities. In this sense, our Corporate Philosophy expresses our commitment to pursuing "Best Quality" and contributing to sound social development. By acting on this commitment, we are working to help customers and ourselves to realize a "Better Life" and a society that is sustainable and KAITEKI.

As a member of the Mitsubishi Chemical Holdings Group, the Mitsubishi Rayon Group's aim as a corporate group is to realize a comfortable and truly sustainable condition, that is to say KAITEKI, for people, society and the earth. To this end, we practice KAITEKI management based on three management concepts—Management of Economics (MOE), Management of Technology (MOT), and Management of Sustainability (MOS).

The Mitsubishi Rayon Group has also defined KAITEKI initiative improvement as a priority management issue in Step 2 (fiscal 2013 – fiscal 2015) of the New Design APTSIS 15 medium-term management plan, which commenced in fiscal 2011. In line with our Corporate Philosophy, we employ MOE, MOT, and MOS to clarify targets and results, and the understanding thus gained enables us to improve our activities further. In this way, we will continue to fulfill our social responsibility as a company, thereby developing into a corporate group that helps to realize KAITEKI.

We consider safe and stable operations to be an important factor in fulfilling our responsibility to society in this way, through business activities aiming for KAITEKI. In accordance with the Mitsubishi Rayon Group's Basic Policies and Action Guidelines on safety, the environment, and quality assurance, we make safety and the environment our top priorities as essential prerequisites for corporate existence. We comply with all relevant laws and regulations, exceeding such legal requirements when necessary. We will continue to place the highest priority on assuring safety and protecting the environment in all our corporate activities, allocate human resources and equipment appropriately and adequately, and maintain and improve safety.

\*KAITEKI is an original concept of the Mitsubishi Chemical Holdings Group, meaning a sustainable condition which is comfortable for people, society and the Earth, transcending time and generations.

Hitoshi Ochi President Mitsubishi Rayon Co., Ltd

## Basic approach to social responsibilities

As a member of the Mitsubishi Chemical Holdings (MCHC) Group, the Mitsubishi Rayon Group is dedicated to realizing KAITEKI.

#### MCHC Group's Concept of Value

Through increasing corporate value, we aim to realize KAITEKI, a sustainable condition which is comfortable for people, society and the Earth, transcending time and generations.



#### 1. Group Philosophy and the decision criteria for corporate activities

The word "chemistry" has a secondary meaning, referring to the compatibilities, relationships and connections between objects, between people and between people and objects. The MCHC Group includes these meanings in the Group's philosophy of Good Chemistry for Tomorrow, and it promotes corporate activities to create better relationship among people, society, and our planet. Based on this philosophy, the MCHC Group has debated "What is Good Chemistry that the future requires?" In other words, the MCHC Group discussed what businesses it needs to develop for the future. The MCHC Group therefore set Sustainability [Green], Health and Comfort as it decision criteria for corporate activities.

#### 2. Business domains of the MCHC Group

The MCHC Group is a corporate Group comprising the following operating companies: MCC, MTPC, MPI, MRC,LSII and TNS. With its operations spread over three business domains, Performance Products, Health Care and Industrial Materials, the Group operates businesses in five segments: Electronics Applications, Designed Materials, Health Care, Chemicals, and Polymers.

#### 3. Realizing KAITEKI through our corporate activities

KAITEKI, an original concept of the MCHC Group, means "a sustainable condition which is

comfortable for people, society and the earth, transcending time and generations." Through our corporate activities, we realize KAITEKI by proposing new value that contributes to resolving environmental and social issues in various fields including living, information and electronics, health and medical care, environment and energy. This is the corporate ideal that the MCHC Group seeks to realize.

#### 4. Harmonious relationships with stakeholders

The MCHC Group considers its stakeholders to include all the people who support our corporate activities: our customers, shareholders and investors, communities, employees and business partners, as well as society, and even the Earth, which is the foundation of our lives. Through dialogue and disclosure to our stakeholders, we jointly identify issues and set targets for the short, medium and long term, and gear our corporate activities to their fulfillment. As part of such activities, MCHC declared our commitment to the United Nations Global Compact in May 2006.

#### Promotion of KAITEKI Management

To realize KAITEKI, we promote "KAITEKI Management" viewing corporate value as the sum total of value created through our three core management perspectives.

Two of them, Management of Economics (MOE) and Management of Technology (MOT), have been traditionally emphasized. MOE promotes to optimize capital efficiency within our company, and MOT strives to create innovations for society. And the third management approach, Management of Sustainability (MOS), has a new perspective and aims to improve the sustainability of people, society and the Earth.

KAITEKI Management is unique, and we call the value created from the three kinds of management "KAITEKI Value." We believe that enhancing KAITEKI Value will lead to the realization of KAITEKI. We promote this management approach aiming to generate revenue and develop ourselves sustainably while contributing to solving environmental and social issues as a company.



## **Biogas Boilers**

#### Sustainability

Sustainability is the concept of contributing society and the environment by reducing the load on the environment, for example emissions of the greenhouse gas CO2, minimizing damage to biodiversity, ensuring the safe handling of chemical substances and addressing the depletion of natural resources. The Mitsubishi Rayon Group works to conserve resources and energy as well as lower CO2 and other environmentally hazardous substances emitted during production. Beyond this, we are fully aware of the importance of helping to reduce CO2 emissions through our products. To counter natural resource depletion, we focus on reducing the use of rare metals contained in catalysts, and on selecting raw materials carefully to help reduce the impact on the environment.

#### Toyama Production Center and Toyama City Eco Town Initiatives

Mitsubishi Rayon's Toyama Production Center lies adjacent to the Toyama City Eco Town Industrial Zone, in which numerous facilities are located. One company operating in this zone is Toyama BDF Co., Ltd., which has been manufacturing biodiesel fuel (BDF) from used edible oils discharged from food factories and meal supply centers since 2006. BDF is an environment-friendly fuel that is carbon neutral and emits a very minimal amount of sulfur oxide (SOX) compared with light diesel oil. As part of environmental preservation measures undertaken since July 2007, the Toyama Production Center supplies Toyama BDF with used edible oil from its company cafeteria. This oil, which had previously been thrown away, is then processed into BDF (around 9,000 liters per year based on fiscal 2010 results) for use in some of Toyama Production Center's on-site vehicles.



Furthermore, the initiatives with the Toyama Production Center and Toyama City Eco Town are also beginning to develop as follows.

Toyama Green Food Recycle Inc. is also located in the Toyama City Eco Town Industrial Zone. Here, microbial treatment of food waste and other material produces biogas (methane), which is used to fuel on-site generators. However, until recently there had been a problem in finding an effective use for surplus biogas.

The Toyama Production Center has been working on this problem in cooperation with Toyama City in a collaborative project between industry and government for using renewable energy. Since March 2012, the surplus biogas has been used effectively as a portion of the fuel for a steam boiler. The result is a reduction of 1,900 tons of CO2 emissions each year.

We will continue to work together with the community and local companies to contribute to the realization of KAITEKI.

\*Information on the Toyama City Eco Town is available on its official website 🗗 (Japanese language only).





## Sustainable MMA

#### Sustainability:Sustainable MMA Development

In recent years, the price of oil has been increasing, along with environmental concern among consumers. As these trends continue, it is important that we adopt diverse raw materials and fuels rather than depend on petroleum alone. Within the Mitsubishi Rayon Group, we feel it is our duty as a leading producer of methyl methacrylate (MMA) to reduce the environmental burdens caused by fossil fuel consumption and greenhouse gas emissions while contributing to the creation of a sustainable society.

The Mitsubishi Rayon Group is developing sustainable MMA monomer manufacturing technology that uses biomass resources as raw material. The Group aims to establish industrialization technology by 2017, and aims to increase biomass-derived MMA monomer production to approximately 50% of existing output in the future.

# Existing processes and new processes chemical raw materials Biomass material Sustainable MMA New direct fermentation process

#### Pathways to Sustainable MMA Manufacturing

At the same time, in MMA monomer manufacturing methods using raw materials derived from shale gas components, as well as existing MMA monomer manufacturing methods that use raw materials derived from petroleum, we will work to reduce energy consumption and emissions during production by developing revolutionary catalysts and processes to improve productivity.

The Mitsubishi Rayon Group is contributing to the achievement of KAITEKI by pursuing innovation in the area of sustainable MMA development.

## **Biocatalyst for Acrylamide**

#### Sustainability:Biocatalyst for Acrylamide

In 1985, Mitsubishi Rayon launched the world's first biocatalytic industrial production of acrylamide, which is used as a raw material in flocculants for water treatment and in oil-recovery agents. The biocatalyst method differs from the conventional copper catalyst method in that it allows production at ambient temperature and pressure, while producing almost no by-products. The process was therefore more simple and superior in terms of resource and energy savings. As a result of continued improvements to the technology since the start of industrial production, we are now able to reduce CO2 emissions to less than a fifth of the emissions from the copper catalyst process.



#### »Enlarged Image

Furthermore, Mitsubishi Rayon not only manufactures and sells acrylamide using the biocatalyst method, but has also developed a licensing business so that its energy-saving, low-environmental impact process, 《NBAT》, using the biocatalyst method, can be implemented all over the world. Through our provision of biocatalysts and processes that are desirable for society, we will strive toward realization of a KAITEKI society.

## TOPLIGHT

Sustainability: TOPLIGHT utilizes the special properties of acrylic resin to make it friendly to people, the planet and society

Acrylic resin features better light permeability than glass and superior weatherability compared with other transparent plastics, thus minimizing sunlight deterioration even when installed outdoors. The Mitsubishi Rayon Group company Ryoko Co., Ltd. has leveraged these properties to produce TOPLIGHT, its signature brand of skylight rooftop windows formed from acrylic sheets. TOPLIGHT is used in a wide array of public facilities, including schools and hospitals.



Fluorescent lights are typically used in office buildings and public facilities as light sources. However, fluorescent lights are not only troublesome to change, but when considering the issues of natural resource depletion and  $CO_2$  emission reduction, there is a need for effective green energy alternatives.

This begs the question: to what extent does everyone think TOPLIGHT brightens interior spaces? As a matter of fact, when three two-square-meter TOPLIGHT skylights are installed equally on the roof of a room roughly half the size of an Olympic swimming pool, this nearly equals the brightness of lighting used in a typical office.



TOPLIGHT makes it possible to do without lights on sunny days, while its retractable roof allows cool air in during the summer but keeps cold air out in the winter, creating a more KAITEKI environment. To be sure, TOPLIGHT has been designed with safety in mind and can be installed with netting able to catch people from falling.

Installing TOPLIGHT can reduce CO2 emissions by 388kg per year, which translates into the annual volume of CO2 absorbed by nearly 28 cedar trees. Leveraging TOPLIGHT's ability to use sunlight as a green energy source, the Mitsubishi Rayon Group is working to provide even greater KAITEKI spaces for people, the planet and society.

## Carbon Fiber Composite Materials for Automobiles

#### Sustainability:Carbon Fiber Composite Materials for Automobiles

The Mitsubishi Rayon Group practices resource and energy saving, and in its production activities strives to reduce emissions of CO2 and substances that impact the environment. In addition to this, we also consider it important to help reduce CO2 emissions through the products that we provide to society.

Since automobiles have a significant impact on CO2 emissions, reducing automobile weight in order to reduce emissions has become an important social issue. There is a growing movement to realize lighter automobiles by employing carbon fiber composite for various structural components in vehicles because it is lighter and stronger than steel.

The Mitsubishi Rayon Group supplies various intermediate materials for carbon fiber composite material used in automobile components, such as precursors, carbon fiber, fabric, and prepreg. In molding process technology, we have also developed the PCM method\* for mass-produced vehicles, which offers superior performance for mass production applications, and it is now being adopted for commercially available automobiles. Looking ahead, we expect the widespread adoption of these products to achieve lower CO2 emissions.

#### \*PCM (Prepreg Compression Molding)

A mass production molding technology for carbon fiber reinforced plastic (CFRP) developed by Mitsubishi Rayon. The technology reduces the forming cycle time from 2-4 hours down to 5-10 minutes by using a press molding technology.





Image provided by Mitsubishi Chemical Holdings Corporation, Automotive Solutions (AMS)

## Groundwater Membrane Filtration System

#### Sustainability:Groundwater Membrane Filtration System

Water shortages caused by the rapid increase in the global population and social development are becoming a serious social problem along with water pollution due to a lack of industrial water treatment facilities, among other issues. The Mitsubishi Rayon Group is dedicated to contributing to solutions for these problems through its products.

WELLTHY CORPORATION, a member of the Mitsubishi Rayon Group, operates a groundwater purification business using Groundwater Membrane Filtration Systems. The system works by drawing water from a well that is usually bored to a depth of around 100 meters where it is unlikely to be affected by polluted water or household wastewater seeping down from the ground surface. The water is purified to the level of ordinary drinking water using primary filtration process and then processed through membrane modules that can remove pathogens such as the colonic bacteria O-157 and cryptosporidium protozoa, in order to supply safe and reliable water.



#### Groundwater Membrane Filtration System (Top) and basic treatment process (Bottom)



#### Demonstrated Effectiveness in Securing Water Supply during Natural Disaster

Compared to the public water supply system, which covers a wide area with large-scale facilities, the Groundwater Membrane Filtration System is a decentralized on-site water supply in the "local production for local consumption" style, using water from right underneath the plant installation. Used in combination with the public supply, it enables a duplicate water supply, and for this reason it has drawn attention from a crisis management perspective for its ability to secure a life-line water supply during natural disasters. Hospitals, nursing homes, supermarkets, factories, hotels, and railway stations are among over 1,000 locations that have installed the system throughout Japan. After the Great East Japan Earthquake, local government organizations began actively introducing the system as part of their focus on BCPs (Business Continuity Plans), helping to create disaster-resilient community infrastructure. Due to the heightened interest in social BCPs, in May 2014 Wellthy

became the first groundwater treatment business entity to acquire the international standard ISO 22301 for business continuity, and it is continuing to improve its maintenance services. Wellthy is also registered with the Ministry of Health, Labour and Welfare as a water quality inspection organization, and the water quality inspection center, Japan Ecology Laboratory, strives to conduct fair, correct and accurate inspections each day.

#### Response to Global Water Problems

The number of people worldwide who currently do not have access to safe water is estimated at 700-800 million. Wellthy seeks to introduce optimal solutions for each country's economic and social situation. The company therefore takes an approach based on the decentralized water supply business model, without limiting the water source to groundwater or the application to drinking water. In Kenya, Wellthy has worked with the United Nations Development Programme (UNDP) to provide a slow sand filtration system to small agricultural communities comprising around 40 households in Machakos County, Eastern Province. The system filters water using a height differential to eliminate the need for electric power.



In this way, the Mitsubishi Rayon Group is contributing to the achievement of KAITEKI through the provision of safe, reliable water.

For further details about Groundwater Membrane Filtration Systems, please see the following link. <u>WELLTHY website</u>

## Coal Transportation via Large Ships

#### Sustainability:Coal Transportation via Large Ships

The transport sector accounts for 20% of domestic CO2 emissions, which is a cause of global warming. Accordingly, initiatives to reduce CO2 emissions during cargo shipping are very important for realizing KAITEKI. Although Mitsubishi Rayon has been taking proactive steps to achieve a modal shift in its transport operations—represented by the switch from trucking to rail—there exists freight that is difficult to move by train. A case in point involves coal, a fuel that is critical to our operations. Coal is transported to Japan via large ships mainly from Australia. Believing it possible to make this mode of cargo transport even more KAITEKI, Mitsubishi Rayon investigated ways to efficiently use large ships.

However, Otake Port, which serves the Otake Production Center, has limited depth, which restricts the load sizes of large ships entering the port. This is why coal has been transported primarily in smaller ships (30,000-ton class) to date. In order to overcome this obstacle, we conducted joint imports with another importer in Japan using large 70,000-ton ships. The ships delivered part of the coal to another port to reduce the load first,



before arriving at Otake as the second port. This approach has enabled us to efficiently transport coal without being restricted by the port's shallow depth. Moreover, this approach not only reduces CO2 emissions during coal transport, but has kept related costs down. In addition, we are able to procure a stable supply of coal from various regions by upgrading coal storage facilities at the Otake Production Center.

Beyond developing new products, Mitsubishi Rayon is working to realize KAITEKI through initiatives such as these in the areas of purchasing and distribution.

## Artificial Carbon Dioxide Baths

#### Health:Artificial carbon dioxide baths

The Japanese have enjoyed taking baths since early times because of their therapeutic effectiveness. Used by the samurai to heal battle wounds centuries ago, hot springs remain popular throughout Japan. The carbon dioxide spring is a standard type of Japanese hot spring, in which CO2 diffuses into bath water.

In general, natural carbon dioxide baths are physiologically beneficial, especially for stimulating metabolism, detoxification and relaxation. In particular, these benefits increase in highly concentrated carbon dioxide baths containing over 1,000 ppm of CO2 per liter of bath water. Because of their high temperatures, however, Japan has very few natural, highly concentrated carbon dioxide baths since CO2 does not easily diffuse into high-temperature water. In addition, producing artificial versions has proven to be quite difficult.

After many years of research, Mitsubishi Rayon developed original CO2 dissolution module technology. This, in turn, led to the successful development of the artificial carbon dioxide baths, a device that can artificially produce highly concentrated carbonate bath water. This product is becoming widely adopted—particularly by welfare, sports and spa facilities—as a new bath-related device that can add carbonation to hot water therapies. Orchestrating the Mitsubishi Chemical Holdings Group's strengths, we aim to improve people's health and thereby realize KAITEKI through health by accelerating the expansion of the artificial carbon dioxide baths overseas and in various fields.





A spa featuring the Ryusenji no Yu carbon dioxide bath (Chigasaki City, Kanagawa Prefecture)

## Mr. Itakura, the Mitsubishi Rayon Cleansui Co., Ltd. manager in charge of developing the artificial carbon dioxide baths

During the development of the triple-layer membrane design used in the artificial carbon dioxide baths, we combined Mitsubishi Rayon's polymer, dilution, production, evaluation and other technologies to create membrane production technology based on a new melt spinning method. Since the Mitsubishi Rayon Group did not possess the physiological expertise or relevant evaluation system at that time, we were forced to seek out



outside experts to summarize data on the effect of artificial carbon dioxide baths on the body,

application methods and equipment requirements. Without a doubt, the development of the artificial carbon dioxide baths was a very difficult task.

By introducing as many people as possible to the artificial carbon dioxide baths, we are providing KAITEKI through relaxing and healthy bathing. In addition, the artificial carbon dioxide baths help promote bathing at a lower water temperature since artificial carbonation feels around 2 to 3°C warmer than regular bath water. This helps reduce thermal energy consumption while allowing us to make a modest contribution to a KAITEKI global environment.

## **DNA Chips**

#### Health: 《Genopal》 DNA Chips

The people have different genes each. Analyzing individual gene can elucidate constitution of the person such as susceptibility to certain disease or difference of the effect of the medicine. Discovering medical treatments suitable for each individual will improve quality of life. DNA chip is a tool suitable for the analysis, which numerous DNA fragments are densely arrayed on the plastic or the glass board.



Applying fiber technologies developed over many years, Mitsubishi Rayon has developed the high sensitive and high reproducible DNA chip 《Genopal》 for users who use large quantities of chips. In recognition of Genopal's unique properties, Mitsubishi Rayon was awarded the Special Technology Prize at the 45th Annual JCIA Technology Award.

With conventional DNA chips, DNA probes are arrayed with 2D on surfaces of glass or semiconductor substrates. 《Genopal》 features a 3D hollow fiber structure, in which the DNA probe is filled using a support gel. In addition, we successfully developed a unique hollow fiber block slicing method that vertically slices Genopal DNA chips in the direction of the fiber axis. These attributes make it possible for DNA chips—which high precisely analyze specific genes from several dozen to several hundred—to be stably mass produced with the same level of quality. Utilizing the accuracy and reproducibility of fiber-type DNA Chip, we are working to realize KAITEKI in the field of "Health" such as personalized medicine.

## Mr. Ikuta, Chief Researcher of the Yokohama Research Laboratories' Bio Device Group, Which is Overseeing Development

DNA chips loaded with probes of genes suitable for evaluating the components of food, or with probes of genes related to the skin, to support basic research on functional foods and cosmetics, have been on the market since fiscal 2008. Yet, in the fields of diagnostic testing applications and support for drug discovery—for which the need for large quantities of DNA chips is expected—the Company has encountered formidable barriers to market entry.



Since joining the MCHC Group in fiscal 2010, the path has been cleared for Mitsubishi Rayon to enter the fields of diagnostic testing and drug discovery-support applications. Moreover, although many issues remain to be overcome, we are steadily progressing step-by-step towards commercialization. The diagnostic testing and drug discovery-support applications are the fields that we can realize directly that "DNA chip is useful for the people", and make our motivation to development go up. For contribution to the healthy and better life of people, we will develop health care product which is useful for people.

For more information on Genopal, click here.

<u>《Genopal》Fiber-type DNA Chips</u>

## **Core-Sheath Acetate Fiber**

#### Comfort:Development of Core-Sheath Acetate Fiber (KIST)

Mitsubishi Rayon Group company Mitsubishi Rayon Textile used its proprietary composite spinning technology to develop (KIST), a highly functional core-sheath fiber with quick-dry and cool-touch functionality as well as high moisture absorbency and release performance.

#### Structure of 《KIST》

(KIST) is a new core-sheath acetate filament which does not belong to conventional fiber. It has a low crystallization cellulose core and a triacetate sheath, created using Mitsubishi Rayon's proprietary acetate compound spinning technology.



#### Special properties of 《KIST》

★Low crystallization cellulose core realizes high moisture absorbency and release, suppressing sticking or stuffing feeling.

★The special ridged cross section quickly disperses moisture through capillary phenomenon in the hollow sections.

 $\star$  Moisture in the filament evaporates through body heat upon contact with skin, so that the vaporization heat creates a cool touch through.

★The sheath section is made from triacetate to realize the elegant luster and vibrant color inherent to acetate filaments.



#### <Quick-drying>

Test method • Dispersed residual moisture ratio (dripped under approx. 0.3 g of water) • Residual moisture ratio (%) = Moisture amount (g) at each time / moisture amount (g) immediately after dripping water × 100 20°C / 65% relative humidity Quick-drying performance evaluation condition (Mitsubishi Rayon standard)

•Time taken to reach moisture content ratio of 10%

#### <Cool-touch>



KIST Filament development team members

Front row center: Mr. Nomura (Currently Section manager of the Filament Section at the Filament Plant)

This is a KAITEKI fiber that applies technology developed for sportswear to fashion apparel.

Front row left: Mr. Ono (Currently in the Safety, Environment and Quality Management Department at the Toyama Production Center)



We have created this fiber by pursuing a stable balance in functionality(moisture absorbency, release and cool-touch). We hope you will try it for yourself.

#### Test method • Precise and Fast Thermal Property-Measuring Instrument (KES-F7, Thermo Labo II) used 20°C / 65% relative humidity

Evaluation condition (Mitsubishi Rayon standard) • Maximum heat absorption speed (q-max) more than 0.200 J/cm2-sec

## Cleansui Long-Term Storage Water

#### Comfort: Cleansui Long-Term Storage Water

Mitsubishi Rayon began selling 《Cleansui》 water purifiers using hollow-fiber membrane filters in 1984 with the aim of realizing KAITEKI through the provision of safe, reliable drinking water. Although 《Cleansui》 was initially available only as a counter top model, our product lineup has expanded to include faucet-mounted, pitcher and built-in types to meet the various needs of our customers.

The need for safe drinking water jumped dramatically in the aftermath of the Great East Japan Earthquake in 2011. There were a growing number of people calling for safe water deliveries to areas where the disaster had disrupted water lines. Consequently, in December 2012, Mitsubishi Rayon Cleansui Co., Ltd. became the first water purifier maker to release its own brand of storable drinking water, <Cleansui Long-Term Storage



Water> . <Cleansui Long-Term Storage Water> is soft water that can be easily used for a variety of applications and features an airtight cap and a PET bottle container made from highly durable materials that enable storage for up to five years.

In April 2013, the Tokyo Metropolitan Government issued an ordinance to assist people who would have difficulty returning home in the event of a disaster. The ordinance calls on businesses to take the steps necessary to ensure that a three-day supply of food and water are stored on their premises. Amid expectations that similar ordinances will be adopted by other prefectures, Mitsubishi Rayon will work to address these types of storage needs in the years ahead.

The mission of 《Cleansui》 is to deliver safe, reliable and tasty water. We will fulfill this mission and, in turn, contribute to people, the planet, and society by meeting customer needs not only through the provision of water purifiers, but a wide variety of other products as well.

#### Message from Mr. Goto, Project Manager

Selling drinking water in PET bottles has been a new business idea of ours at the Mitsubishi Rayon Cleansui's Creative Planning Department Sales Office for quite some time. However, the Great East Japan Earthquake and the abovementioned Tokyo Metropolitan's ordinance were undoubtedly major catalysts for launching this business. Intending to provide safe water for customers in

times of need, the number one reason for



launching this business was to deliver Cleansui-quality water in an easy-to-use form not limited only to water purifiers.

Although we released this product on the premise of marketing it to companies, it goes without saying that there is a need for clean drinking water among individual customers. The most common needs among our customers are extending the years of storage along with lowering costs. We will make every possible effort in the years ahead to meet these needs.

## **Golf Shafts**

#### Comfort: 《Diamana》 Golf Shafts

The Mitsubishi Rayon Group possesses a product chain stretching from 《PYROFIL》 carbon fiber — made from polyacrylonitrile (PAN) filaments produced in-house — to intermediate materials and molded products based on carbon fibers. Mitsubishi Rayon's Carbon Fibers & Composite Materials business provides carbon fiber products used in a wide range of applications. Our golf shafts take maximum advantage of the stronger-than-steel, lighter-than-aluminum properties of carbon fibers.

Many years ago golf shafts were manufactured from hickory, but later on steel was substituted to meet the need for greater durability and driving distance. Recent advances in golf clubs focused on the use of carbon fiber composite materials in response to the demands of golfers eager to improve their driving distances while using lightweight clubs. Accordingly, the Mitsubishi Rayon Group released 《Diamana》 in 2004, leveraging its accumulated knowhow in shaft development as a long-established, integrated golf club manufacturer that excels in uniform development and production, from carbon fiber raw materials to golf shafts. We continued to advance 《Diamana》 in order to provide golfers around with world with the fun and excitement of golf, and today the product has reached its THIRD GENERATION.

In the THIRD GENERATION product, we collaborated with Mitsubishi Chemical Holdings Group company Mitsubishi Plastics, Inc. to develop super-elastic pitch carbon 《DIALEAD》\* ultra-thin sheets. These have enabled us to achieve an even more precise and rigid design that has successfully improved performance even more.

In September 2014, we launched the new R Series alongside the B Series and W Series, to complete a product line-up that caters to the needs of diverse golfers.

《Diamana》 will continue to realize KAITEKI for golfers all over the world.

\* 《DIALEAD》 is a trademark of Mitsubishi Plastics, Inc.



#### Mr. Ito, Manager in Charge of Marketing the Diamana Series

《Diamana》 is a professional brand that targets relatively advanced golfers as well as those possessing considerable power. With the THIRD GENERATION shafts specified to be lightweight at around 50 g, we have developed product lineups that can provide KAITEKI to an even wider array of golfers.

The chic understated appearance of the shafts has been updated to be more visually attractive. We



provide products that meet a variety of golfing needs for, of course, those who are experienced golfers as well as those who want to improve their game, those who want to show off their stylish golf equipment, and those who just love 《Diamana》. Please give 《Diamana》 a try; you won't be disappointed.

## The Mitsubishi Rayon Group and CSR

## How the Mitsubishi Rayon Group views CSR

The Mitsubishi Rayon Group recognizes that its very existence as a going concern rests on its ability to fulfill the Group's corporate social responsibility and garner the trust of society. In encouraging each and every employee to practice its corporate philosophy as embodied in the Group's "<u>Corporate</u> <u>Behavior Charter</u>," Mitsubishi Rayon is better positioned to promote CSR activities as a corporate entity. Striving to meet the ever-increasing expectations of society while at the same time strengthening its business activities, the Mitsubishi Rayon Group is endeavoring to contribute to the sustainable development of society.

#### The Mitsubishi Rayon Group and its major stakeholders

Building relationships of trust with stakeholders is the most important aspect in carrying out CSR activities. Building on a cumulative process of interactive dialogue, we will accurately reflect the opinions, expectations and needs of stakeholders in our business activities and cooperate with stakeholders in an effort to ensure the sustainable development of society.



## **CSR Implementation Structure**

The Mitsubishi Rayon Group's CSR structure has instituted a CSR Management Meeting as a decision-making meeting mechanism that encompasses CSR activities as a whole. The CSR Management Meeting oversees a CSR activity proposal and promotion structure that comprises the Risk Management Committee, Safety, Environment & Quality Assurance Committee, Compliance Committee, and Information Security Committee. Complementing this overall framework, the Corporate Planning Division KAITEKI Promotion Group has been positioned to serve as an overarching CSR secretariat.

CSR management meetings are chaired by the president and comprised of Management Meeting members, which includes corporate auditors. In addition to receiving reports on activity details, CSR Management Meetings serve as a forum to deliberate on and determine Group CSR activity plans.

Each of the Risk Management, Safety, Environment & Quality Assurance, Compliance and Information Security committees formulate activity plans on an individual presiding theme basis. Once a matter is determined at the CSR Management Meeting level, each committee then works diligently to promote specific activities.



As of April 1, 2014

For details on the activities below, please click on the following links:

- Corporate Governance
- Compliance
- Risk Management

## Safety, Environment and Quality Assurance Management Systems

Organization for Promoting the Management of Safety, the Environment and Quality Assurance (as of April 1, 2014)

Audit on Safety, the Environment and Quality Assurance in Fiscal 2013

Based on the Responsible Care\* policy, we undertake business activities in consideration of the environment, safety and quality assurance.

\*Responsible Care

"Responsible care" is a voluntary initiative in which companies ensure environmental friendliness, safety and health at all stages of chemical substance usage—from development to production, distribution, use and final disposal —while communicating with the public about these activities and achievements.

Organization for Promoting the Management of Safety, the Environment and Quality Assurance (as of April 1, 2014)

The Mitsubishi Rayon Group adopts a top-down approach for managing safety, the environment and quality assurance. Accordingly, basic management policies and measures in these areas are determined by the CSR Management Meeting (Chairman: President of Mitsubishi Rayon), which serves as a decision-making body for all Group CSR activities. Placed beneath the CSR Management Meeting, the Safety, Environment & Quality Assurance Committee (Committee Chairman: the executive officer in charge of safety, the environment and quality assurance) was established as a body that formulates and promotes basic policies and measures.



#### Basic Policies on Safety, the Environment, and Quality Assurance

 Top priority shall be placed on safety and the environment in all business activities, as these are essential for corporate existence.

We shall supply our customers with satisfactory, safe, and reliable products.

(Established in 1998)

#### Action Guidelines on Safety and the Environment

- ①All laws and regulations shall be observed, with additional measures stricter than what is legally required adopted when deemed necessary.
- ②All actions shall be taken with a strong sense of responsibility so that any and all types of accident are prevented.
- ③All actions shall be rooted in the spirit of self-accountability and autonomous management.
- ④All business activities shall be carried out under careful consideration to the environment.
- ⑤Every possible effort shall be made to uphold safety and reduce environmental burden throughout the entire life cycle of each product.
- ©Education shall be used to improve consciousness of safety and the environment, with the result put to practical use at the workplace.
- ⑦Active communication shall be maintained with international and local communities to raise the level of corporate transparency.
- (B)Scientific and technical means shall be utilized to make improvements on a constant step-by-step basis.

(Established in 1998 and partially revised in 2001)

#### Basic Policy on Quality Management

To manufacture and supply products that satisfy customers and meet their requirements, the Mitsubishi Rayon Group has established its Safety, Environmental and Quality Management Regulations. The Group takes a thorough approach to quality management through promoting cooperation between the relevant departments, and does its utmost to ensure quality both effectively and economically, thereby achieving its goal of quality assurance.

(Established in 1984)

#### Establishment of Quality Management Committees

The Mitsubishi Rayon Group has established a committee for each stage of quality management at Head Office, production centers and manufacturing plants, and seeks to raise quality through strict quality management, discussion of quality issues and measures to resolve any issues.

#### Items for quality assurance

- 1. Management of raw materials, parts, etc.
- 2. Management of manufacturing drawings for products, quality standards, etc.
- 3. Management of manufacturing processes, manufacturing facilities, etc.
- 4. Management of subcontractors
- 5. Management of inspections, tests and measuring and test equipment
- 6. Management of encasement, packaging, labels, warehouse arrivals, storage and shipments
- 7. Quality records and audits
- 8. Processing of non-compliant products and handling complaints
- 9. Control of quality management system
- 10. Management of chemical substances



## Audit on Safety, the Environment and Quality Assurance in Fiscal 2013

## Audit Types

Audit type	Audit target
General audit Audits conducted by management under the Safety, Environment & Quality Assurance Committee (with a corporate auditor and an executive member of the union as observers)	MRC <sup>*</sup> , Lucite International Group
<b>Departmental audit</b> Audit to supplement general audit; this is a detailed audit on the sampled departments	MRC*
Group company audit Audit that is implemented as part of the Group's management under approval by the Safety, Environment & Quality Assurance Committee	Group companies, (Lucite International Group excluded)
Safety audit Audit that is conducted by the Head Office on production centers authorized in accordance with the High Pressure Gas Safety Act	Production centers authorized in accordance with the High Pressure Gas Safety Act
<b>Special audit</b> Audit that is implemented under the direction of the Chairman of the Safety, Environment & Quality Assurance Committee in the event of a serious accident or disaster	Mitsubishi Rayon Group
Extraordinary audit Audit of production center and/or Group company that is implemented under the direction of the Chairman of the Safety, Environment & Quality Assurance Committee	Mitsubishi Rayon Group
<b>Product liability and quality assurance audit</b> Audit that is implemented on the entirety of business activities from marketing to production under approval by the Safety, Environment & Quality Assurance Committee	MRC <sup>*</sup> product lines
Quality assurance audit of contract manufacturing partners Quality assurance audit of companies manufacturing Mitsubishi Rayon <sup>*</sup> products as subcontractors	Contract manufacturing partners

\*Please refer to "Scope of environment related data collection" for the scope of audit.

## List of audits executed in fiscal 2013

Audit type	Department/Company	Audit target
General audit	Otake Production Center, Toyohashi Production Center, Toyama Production Center, Yokohama Production Center and Lucite International Group (one company)	Safety and the environment
Departmental audit	Otake Production Center (six departments), Toyohashi Production Center (five departments), Toyama Production Center (four departments) and Yokohama Production Center (three departments)	Safety and/or the environment
Group company audit	Group companies overseas (two companies) and Group companies in Japan (two companies)	Safety, the environment and quality assurance
Safety audit	Otake Production Center	Safety
Special audit	Nitto Gypsum Board Co., Ltd.	Safety
Extraordinary audit	Toyama Filter Tow Co., Ltd.	Safety
Product liability and quality assurance audit (MRC product lines)	Carbon fiber, composite materials, gas diffusion layer substrate (GDL), fibers, membranes (hollow fiber membrane), Cleansui, membrane products	Product liability and quality assurance
Quality assurance audit of contract manufacturing partners	Contract manufacturing partners (nine companies)	Quality assurance

## Audit results for fiscal 2013

Audit type	Report
General audit	Audits were implemented at four production centers in Japan and at the major sites of Lucite International Group from fiscal 2013. Audits of production centers in Japan were performed at the department level closer to the frontlines, using check sheets prepared in advance. Although the overall level of safety and environmental management is improving, the audit still found several deficiencies. While properly monitoring risks in each department, the audited sites were requested to properly monitor risks in each department and steadily implement items requiring action.
Departmental audit	All audited departments were confirmed to be precisely undertaking the "check" and "action" phases of PDCA regarding safety and occupational health measures. In addition, surveys focusing on environmental burden management status and efforts to prevent environmental accidents were conducted. Consequently, each audited department was requested to make improvements on the necessary items.
Group company audit	The audit found that safety and environmental management systems were in place and systematic activities were undertaken to upgrade them. The audited companies were requested to make necessary improvements with respect to material risks, and to further upgrade emergency responses and safety management systems.
Safety audit	The audit focused on the safety rules for industrial complexes and other facilities stipulated by production center safety management systems, status of conformity with certification notices, and the effectiveness of safety management activities. The audited sites were instructed on how to improve deficiencies. The audits also performed final confirmation of implementation records and the status of responses to comments made during previous audits to inspected organizations and operating sections. The status of certified safety inspection management was also audited. These audits found that the status of compliance was good. However, instructions were given on how to improve deficiencies in the management of inspection records and related areas.
Special audit	A special audit was conducted in response to severe occupational injuries where a leg was caught in conveyor belts. The audit confirmed improvements at the sites of the incidents and plans for replication of the improvements at similar sites. Furthermore, the audit requested that systems be put in place for confirming safety during equipment modifications, along with improving the safety awareness of workers. The audit also called for follow-up on these measures.
Extraordinary audit	Extraordinary audits were carried out at Group companies where a large number of occupational injuries had occurred. The audits confirmed the effectiveness of measures to prevent a recurrence of the occupational injuries that occurred. The audits also requested these Group companies to reduce process-related problems that contributed to the occupational injuries, and to provide care to inexperienced workers.
Product liability and quality assurance audit	Audits were conducted on a total of 18 departments, including seven target product lines, business divisions, factories and R&D departments. The audit focused on compliance in the areas of product liability and quality assurance systems, screening status until new product release, contract manufacturing partner management and chemical substance management during new product development. Each department was given specific instructions to make improvements.

#### Scope of environment related data collection

Only companies that mainly engage in manufacturing and processing are subject to the aggregation of environment-related data. See (1) through (4) below for expressions used in this report.

(1) MRC Group: companies that come under the following categories (2) to (4)

(2) MRC: Mitsubishi Rayon and Group companies operating at Mitsubishi Rayon's production centers

(3) Domestic Group: consolidated subsidiaries in Japan other than those which come under the above category (2)

(4) Overseas Group: consolidated subsidiaries in other countries

Subject companies and data

## Overview of Environmental Burdens

# Overview of Environmental Burdens at the Mitsubishi Rayon Group

The Mitsubishi Rayon Group is gaining an understanding of the environmental impact of its products throughout their lifecycles, and is working to reduce this impact.

Procurement of materials						
INPUT Energy consumption (Converted into crude oil) MRC 289,000 k? Domestic Group 9,000 k? Overseas 458,000 Group k?	Total drainage volume MRC 90 million m <sup>3</sup> Domestic 4 million m <sup>3</sup> Group Overseas Group 1 million m <sup>3</sup>	OUTPUT Chemical substances MRC 1,204 tons Domestic Group 44 tons Overseas Group 148 tons	Greenhouse gases (converted into CO2) MRC 1,201,000 tons Domestic Group 24,000 tons Overseas 1,738,000 Group tons			
Water consumption MRC 103 million m <sup>3</sup> Domestic Group Overseas Group 14 million m <sup>3</sup>	BOD level MRC 27 tons Domestic Group 1 ton Overseas Group 6 tons	COD level MRC 738 tons Domestic Group 154 tons Overseas Group 55 tons	MRC 1,679 tons Domestic Group 30 tons Overseas Group 508 tons			
	1	,	SOx emissions         MRC       652 tons         Domestic Group       86 tons         Overseas       1.010			

Group

tons

## Reduction in chemical substances emitted

#### Chemical emission reduction

The Mitsubishi Rayon Group is reducing chemical emissions in accordance with its Fifth Chemical Substance Reduction Plan, with fiscal 2015 as the target year.

#### Fifth Chemical Substance Reduction Plan Initiatives

#### <Targets>

1. Reduction of total emissions (target year: fiscal 2015)

By the target year, total emissions of MRC-PRTR substances\* (442 substances) by the MRC Group (excluding Lucite International Group) shall be reduced to 70% of the emissions recorded in fiscal 2005 (reference year).

2. Reduction of emissions of individually managed substances (target year: fiscal 2015)

Reductions will be made in the specific substance groups detailed below:

i) Twelve volatile organic compound (VOC) substances that account for most of MRC's atmospheric emission volume

ii ) Five substances that the MRC Group emits the most

#### <Results>

The MRC Group achieved its total emissions target, with total emissions of 1,395 tons in fiscal 2013 against a target of 1,550 tons for fiscal 2015.

However, total emissions increased by 45 tons from fiscal 2012, partly due to the impact of increased production volume. The MRC Group will continue striving to reduce chemical substances.

\*MRC-PRTR substances:

433 substances subject to the PRTR research conducted by the Japan Chemical Industry Association (JCIA) on its corporate members (including substances subject to legal notification) and 9 other substances emitted by MRC in high volumes for a total of 442 substances.

Click here for detailed tables and graphs

#### Management of Chemical Substances in Procured Goods

The Group began conducting green procurement surveys in fiscal 2005 to fully comprehend and manage substances that impact the environment (including raw materials and other procured goods) and have the potential to pose a health hazard. The Group will continue conducting green procurement surveys as well as take the steps necessary to effectively manage chemical substances.

#### Commencing Treatments to Eliminate Polychlorinated Biphenyl (PCB)

In order to comply with the Act on Special Measures against PCB Waste established in 2001, the Mitsubishi Rayon Group adopted a policy of removing all equipment containing PCB by fiscal 2025, and is systematically proceeding with treatment. Furthermore, any equipment containing PCB within the Group is stored and managed properly according to the law, in order to prevent any loss or theft.

## Initiatives for Preventing Global Warming

The Mitsubishi Rayon Group is doing its utmost to achieve a sustainable society by focusing on activities that reduce CO2 emissions and save energy.

#### Toward a KAITEKI Society

We are undertaking various activities to prevent global warming. CO2 accounts for the majority of greenhouse gases emitted by the Mitsubishi Rayon Group. Eighty percent of CO2 emitted by the Group comes from energy use. Consequently, we are applying our ingenuity in fuel conversion and resource-saving activities centered on energy conservation as part of CO2 reduction.

#### <Our Main Activities>

Energy-saving activities in production and administrative operations Energy-saving and fuel-conversion activities in logistics operations Energy-saving and fuel-conversion activities chiefly in energy-related operations Resource-saving activities

#### <Targets>

Reduce energy consumption per unit of production by 3% by fiscal 2015, compared with the fiscal 2012 level

#### <Results>

We are promoting energy conservation activities as a means of preventing global warming. In fiscal 2013, energy consumption per unit of production improved by 4% from the previous fiscal year. We have thus achieved our target of improving energy consumption per unit of production by 3% by fiscal 2015. Meanwhile, CO2 emissions increased drastically due to an enlargement of the scope of data aggregation from fiscal 2013. However, comparing CO2 emissions based on the same scope of data aggregation as in the previous fiscal year, our greenhouse gas emissions have decreased slightly. Going forward, we will continue to push ahead with energy conservation activities.

### Click here for detailed tables and graphs

#### Initiatives in Logistics Operations

The Mitsubishi Rayon Group has promoted modal shifts, decreasing truck transport and increasing marine and rail transport.

Mitsubishi Rayon became a certified "Eco-Rail Mark" company in April 2010 under a program promoted by the Ministry of Land, Infrastructure, Transport and Tourism. At the same time, Mitsubishi Rayon's acetate tow for cigarette filters, (DIANAL) acrylic coating material and (ACRYPET) acrylic molding material were certified as products allowed to carry the Eco-Rail Mark.

In fiscal 2013, CO2 emissions increased 3,000 tons from the previous fiscal year. This mainly reflected an enlargement in the scope of data aggregation.

Looking ahead, the Group will continue to promote eco-friendly logistics operations.

## CO2 emissions in logistics (outsourced) (1,000 tons of CO2/year)

	Fiscal year	2009	2010	2011	2012	2013
	CO2 emissions	11	12	10	11	14



## Safety and Disaster Prevention Initiatives

The Mitsubishi Rayon Group promotes initiatives for safety and disaster prevention, guided by a basic policy that "top priority shall be placed on safety and the environment in all business activities, as these are essential for corporate existence."

- 1. Safety conventions, at which managers directly emphasize the importance of safety
- The president and the management team visit production centers every year to speak directly to employees about the importance of safety.
- 2. Enhance education
- The Company has a systematic education program starting from when people join the Company.
   The program provides the necessary education to ensure safe operations and general safety.
- We also have an education program where employees can actually experience the feeling of danger, in order to increase their sensitivity to danger.
- 3. Strengthening facility management
- Maintain close communication between operation management and facility management divisions to maintain and improve safety.
- We invest the necessary resources and pick up on new methods and technologies for improving safety as part of our effort to ensure sound facilities.
- 4. Ensuring ongoing safety
- When we make changes to the existing patterns, such as changes in operating procedures and facility upgrades, we utilize risk assessment methods and other means to check for any issues in terms of ensuring safety and protecting the environment.
- We use accident information from inside and outside the Group for inspections and survey activities (in fiscal 2012-2013 we conducted safety inspections of reaction process in the Company and Group companies as well as a monomer tank survey and a survey of the risk of being caught by rotating machinery). Looking ahead, we will continue to make effective use of information to ensure safety.
- 5. Support for cooperating companies
- We work together with cooperating companies who support our operations, jointly promoting measures to ensure safety by establishing General Safety Management Meetings.
- For employees at cooperating companies, we also provide human and logistical support for education, such as providing risk information on the substances we handle, as well as operations.

#### Overview of activities for fiscal 2013

In line with the new APTSIS 15 medium-term management plan (target year fiscal 2015), the Group promoted and improved safety and disaster prevention initiatives. These initiatives centered on three goals set out in the plan:

- 1) eliminate injuries that result in work absence and eliminate serious accidents;
- 2) provide support for Group companies; and
- 3) set targets to meet external commitments.

#### 1) Eliminate Injuries That Result in Work Absence and Eliminate Serious Accidents

#### Activities focusing on domestic production centers

- 1. Safety conventions, at which managers directly emphasize the importance of safety
  - Conducted at four production centers on July 4, 2013.
- 2. Simultaneous workplace patrols by management conducted daily between 1:00 p.m. and 1:30 p.m.
  - Continued safety inspections by management as an opportunity for communication between employees and management.
- 3. Construction of a system for change management
  - · Continued to construct a system for management of changes related to operations
- 4. Enhancement of facility management
  - Conducted a full inspection of aging piping at main production centers and established a
    maintenance and renewal plan giving consideration to priority. In fiscal 2014 we will conduct
    appropriate renewals based on risk assessment and a survey for planning systematic repairs
    and maintenance. We will formulate a renewal plan and a repair and maintenance plan based
    on the result.

#### Activities undertaken that include Group companies

1. Integrated training for safety personnel of Group companies in Japan

- Conducted twice annually. Shared disaster information in the Mitsubishi Rayon Group and promoted measures to prevent recurrences.
- Safety assessments of new equipment and renewed equipment (expansion of the scope of assessment)
  - Revised facility safety and environmental assessment rules, and expanded the scope of safety
    assessment of new equipment and renewed equipment.
- 3. Improvements in reporting and issues cited in the general audit
  - The audits that had been conducted on a plant- or division-basis were changed to audits on a section- or business group-basis in order to achieve audits more closely focused on frontlines.
- 4. Safety checks of plants with reaction systems and of monomer tanks
  - For safety inspections of plants that have reaction systems, follow-up checks were made for departments inspected in fiscal 2012. Safety checks were also conducted for Group companies in Japan and overseas.
  - Monomer tank inspections were conducted and policies for countermeasures to abnormal polymerization formulated.

#### Occupational injuries

The total number of Group-wide occupational injuries and injuries that result in work absence increased by 11 and 7 cases, respectively, from fiscal 2012. In one case, a severe occupational injury was caused by someone's leg being caught in a conveyor belt. A special audit was conducted at the place where the occupational injury occurred and guidance was provided to make improvements. The Mitsubishi Rayon Group will conduct thorough Group-wide measures to prevent a recurrence, and continue working to reduce the number of occupational injuries.



Incidence Rates of Occupational Injuries That Result in Work Absence\* (absence of 1 day or more)

\*Incidence rate of occupational injuries: Number of occupational injuries that result in work absence / 1 million work hours
■Causes of Occupational Injuries (MRC Group)

\*Figures from fiscal 2011 onward include Lucite International Group



### Accidents

The Mitsubishi Rayon Group's total number of accidents in fiscal 2013 remained at the same level as the previous fiscal year.

There were no major accidents, however small accidents continued to occur. To avoid the occurrence of major accidents, we carefully research the causes of small accidents and implement countermeasures.

With respect to the leakage accidents involving hazardous substances in the previous year and the year prior to that, we have put countermeasures in place. In fiscal 2013 there were no environmental accidents in Japan.



Accident Causes (MRC Group)

#### 2) Provide Support for Group Companies

Since fiscal 2009, we have continued to hold training sessions for safety/environment personnel at domestic Group manufacturing companies. In China, Mitsubishi Rayon (Shanghai) Co., Ltd. implemented various measures, primarily through its Safety, Environmental and Quality Products and Compliance Promotion Office, which included strengthening and expansion of safety management systems, audits and training.

#### 3) Set Targets to Meet External Commitments

The Group achieved its fiscal 2015 targets regarding the reduction of chemical emissions into the environment and energy use per unit of production. Moreover, the zero waste emission plan for waste products was achieved at 17 sites. We will continue working to reduce our environmental impact going forward.

### Fiscal 2014 Action Plan

#### 1) Aim to Eliminate Injuries That Result in Work Absence and Eliminate Serious Accidents

We will promote the full penetration and adherence to the countermeasures that we have implemented since fiscal 2013. Moreover, in fiscal 2013, we addressed the important issue of improving safety by enhancing the fundamentals of operation and facility management while conducting safety checks at all production centers in order to prevent major disasters at chemical plants. In fiscal 2014, we will follow up on these measures to ensure that they are being implemented.

### 2) Provide Support for Group Companies

We will continue providing environmental and safety-related support to Group companies.

### 3) Set Targets to Meet External Commitments

We are undertaking measures that are in line with our set targets for the reduction of chemical emissions, the reduction of the external landfill volume of waste and the prevention of global warming. For further details, please refer to our proper chemical substance management, waste reduction and global warming prevention initiatives.

#### 4) Strengthen Safety Management at Production Centers

Guided by basic policies concerning safety, the environment and quality, Mitsubishi Rayon is implementing measures to prevent serious accidents by strengthening safety management in such areas as high-pressure gas handling in accordance with the following safety management policies.

- Achieve safe and efficient production by implementing appropriate preventive measures for hazards, including leakage of harmful substances and so forth, and preventing accidents, disasters and abnormalities.
- Improve the level of each employee's safety management by entrenching, expanding and continuously improving safety management systems.
- Comply with safety-related laws and voluntary standards, and take measures that exceed legal statutes when necessary.

Furthermore, with respect to processes involving harmful substances, we have conducted process risk assessment based on normal operating conditions; however, we are currently making risk assessments in abnormal operating conditions as well.

#### Disaster Prevention Measures

#### Disaster prevention activities

The Mitsubishi Rayon Group conducts disaster prevention activities, including safety training for employees, inspection and maintenance of its equipment, and disaster prevention drills. In addition, the Group engages in disaster drills and other events jointly organized with local organizations. The Group is also endeavoring to prevent accidents and disasters during transport and is adopting logistical safety measures should any incident occur.

We regularly conduct disaster prevention drills envisaging a major earthquake, as well as drills on safe emergency stop procedures at plants, checking on the safety of team members, and evacuations. In this way we are constantly ready to deal with a major earthquake. Moreover, we are

carrying out earthquake resistance analysis of our plant and factory buildings and systematically strengthening places that require reinforcement.

Mitsubishi Rayon's earthquake resistant high-pressure gas facilities have all been built to meet the legal standard at the time of construction. However, we are now carrying out a survey to check facilities and structures that were built prior to current laws. Within fiscal 2014, the survey will determine whether the facilities and structures comply with today's standards and the necessary reinforcement plans will be drafted. Piping systems are also being surveyed to check for compliance with current legal standards, and we will draft the necessary reinforcement plans for these as well.

### Environmental Complaints

The Mitsubishi Rayon Group will strive to undertake business activities that fully consider the lifestyles of local residents. For example, in fiscal 2013, when we received a complaint from residents living near our production centers about dead leaves from the willow trees on our site, we took immediate action to remedy the problem by having the trees removed.



### ■Number of Complaints Received by the MRC Group

# Waste Reduction Initiatives

# Waste Reduction and Recycling

MRC Group will work to realize the fiscal 2015 waste reduction target of its Group-wide Zero Emissions Plan in order to decrease its external landfill volume.

# Group-Wide Zero Emissions Plan (Target Year: Fiscal 2015)

# -Targets-

Zero emissions\* will be achieved throughout MRC Group in Japan (involving each production center and Group company) by fiscal 2015. Data calculation includes all waste, excluding combustion ash from power generation.

# -Results-

In fiscal 2013, the third year of the Group-Wide Zero Emissions Plan, one on-site Group company and one off-site Group company achieved zero emissions. As a result, four production centers (unchanged from the previous fiscal year) and all on-site and off-site Group companies (13 companies) had achieved zero emissions.

\*The term "zero emissions" refers to the ratio of landfill volume accounted for by waste that is 1% or below.



# ■Zero Emission Achievement Status in ■Breakdown of Waste Produced by MRC in Fiscal

# Resource Conservation Activities (Monomer Recycling)

Acrylic resin is a recyclable material that, with appropriate heating, can be decomposed into methyl methacrylate (MMA) monomer and reused to make new products. In 1997, the Toyama Production Center began operating a recycling plant using an original recycling technology. This plant recycles acrylic resin waste generated on site into high-purity MMA monomer. Aiming to help realize a sustainable society, Mitsubishi Rayon is working to establish a larger-scale monomer recycling system to recycle acrylic resin products currently in the market.



# Environmental Data and References

Scope of Data Collection Related to Environment

- Major Environmental Index Total Chemical Emissions
- Major Chemical Emissions and Transfer Volumes
  Initiatives for Preventing Global Warming
- Initiatives for Reducing Waste ↓ Environmental Accounting ↓ Green Purchasing

# Scope of Data Collection Related to Environment

# Scope of Data Collection Related to Environment in Fiscal 2013<sup>%1</sup>

			Reduction Substance	in Chemical es Emitted	emical <sup>Z</sup> Prevention of Global tted r Warming			Major Environmental Index					ISO Certification ※3		
			Total emission targets	Individually managed substances	waste emissions	Energy consumption per unit of production	Greenhouse gas emissions	Water consumption	Total drainage volume	BOD emissions	COD emissions	SOx emissions	NOx emissions	I S O 9 0 0 1	I S O 1 4 0 0 1
		Otake Production Center and on-site Group companies	O	O	0	o	o	0	0	-	0	0	0	ο	0
(1) M		Toyohashi Production Center and on-site Group companies	0	0	0	0	0	0	0	0	0	0	0	0	0
R C G r	(2) M R C	Toyama Production Center and on-site Group companies	0	0	0	0	0	0	0	0	-	0	0	0	0
		Yokohama Production Center and on-site Group companies	0	0	0	0	0	0	0	-	0	0	0	0	0
		Mizushima AN Plant	0	0	0	0	0	0	0	0	0	0	0	0	0
		Kurosaki Specialty Polymer Plant	0	0	0	0	0	0	0	0	0	0	0	0	0

	MRC Unitec Co., Ltd.	0	0	0	0	0	0	0	-	0	0	0	0	0
(3)	Diatec Co., Ltd.	0	0	0	0	0	0	0	0	0			0	0
(0) D 0	ToeiKasei Co., Ltd.	0	0	0	0	o	0	0	-	-	0	0	0	0
m e	CHALLENGE Co., Ltd. <sup>%2</sup>	0	0	0		0	0	0	0	0			0	0
s t	Tosen Co., Ltd.	0	0	0	0	0	0	0	-	-				
i c	Ryoko Sizing Co., Ltd.	0	0	0	0	o	0	0	-	-				
G	MRC Koda Co., Ltd.	0	0	0	0	0	0	0	-	-	-	-	0	0
o u	Nippon Rensui Co.	0	0	-	0	0	0	0	-	-	-	-	0	
р	Wellthy Corp. <sup>%2</sup>	-	-	-	-	-	-	-	-	-	-	-	0	0
	Nitto Gypsum Board Co., Ltd.	0	0	0	0	0	0	0	0	0	0	0	0	0
	Thai MMA Co., Ltd.	0	0	-	0	0	0	0	0	0	0	0	0	0
	Huizhou MMA Co., Ltd.	o	0	-	o	o	0	0	-	-	0	0	0	
)	Suzhou Sanyouli Chemicals Co., Ltd.	0	o	-	o	o	0	0	-	0	-	-	0	0
	Diapolyacrylate Co., Ltd.	0	0	-	0	0	0	0	-	-	-	-	0	0
	Mitsubishi Rayon Polymer Nantong Co., Ltd.	0	o	-	o	o	0	0	0	0	0	0	0	0
(4) 0 v e	Diatec (Shanghai) Co., Ltd.	0	o	-	o	o	0	0	_	-	-	-	0	0
r s e	Suzhou MRC Opto-Device Co., Ltd.	0	o	-	O	o	0	0	-	-	-	-	0	0
a s	Dianal America, Inc.	0	0	-	0	0	0	0	-	-			0	
G r o u	Mitsubishi Rayon Carbon Fiber and Composites, Inc.	0	o	_	O	o	0	0	0	0	0	0	0	
р	ALDILA, Inc. <sup>%2</sup>	0	0	-	-	0	0	-	-	-	-	-	0	
	TK Industries GmbH <sup>※2</sup>	-	-	-	0	o	-	-	-	-	-	-	0	
	Dalian Rayon Environmental Equipment Co., Ltd.	o	o	-	O	0	0	0	0	0	-	-	0	0
	Wuxi MRC Origin Water Membrane Tech. ※2	0	0	-	0	0	0	0	-	0	-	-		
	Mitsubishi Rayon Lucite Group Ltd. ※2	-	-	-	0	0	0				0	0	0	0

\*1 Data related to Environment. • : required, - : not required, blank : not measured

ISO acquisition.  $\circ$  : Companies with ISO acquisition (Some Lucite group companies are without acquisition).

# Environmental Data by Production Center

Production Center Name	Otake Production Center	Toyohashi Production Center	Toyama Production Center	Yokohama Production Center
Location	Miyukicho, Otake City, Hiroshima Prefecture	Ushikawadori, Toyohashi City, Aichi Prefecture	Kaigandori, Toyama City, Toyama Prefecture	Daikokucho, Tsurumi-ku, Yokohama City, Kanagawa Prefecture
Chemical emissions (tons) (Figures in brackets show the number of substances)	774(81)	37(31)	356(22)	3(11)
SOx emissions (tons)	588	17	47	0
NOx emissions (tons)	1,156	147	308	0
COD emissions (tons)	715	6	-	2
BOD emissions (tons)	-	3	24	-
Water Consumption (million m <sup>3</sup> )	85	5	11	0
Water drainage (million m <sup>3</sup> )	75	5	10	0
External landfill volume (excluding power combustion ash) (tons)	721	2	126	0
Energy use per unit (year- on-year change)	Down 2.2%	Down 9%	Down 3.2%	Down 28.3%

# Environmental Data for Fiscal 2013 by Production Center

# Major Environmental Index



# Water consumption

\* The number of Group companies included in the scope of data aggregation has increased from fiscal 2013.











\* The number of Group companies included in the scope of data aggregation has increased from fiscal 2013.

# COD emissions



\* The number of Group companies included in the scope of data aggregation has increased from fiscal 2013.





# List of Individually Managed Substances (5th Plan Target 2)

 i) Twelve VOC substances that Mitsubishi Rayon released into the atmosphere in large volumes

Substance
Acrylonitrile
Dichloromethane
1,3-Butadiene
N,N-dimethylformamide
Styrene
Toluene
Methyl alcohol
Propylene
Isopropyl alcohol
Tert-butyl alcohol
Vinyl acetate
n-hexane

ii) Five substances that the Mitsubishi Rayon Group emits the most



# Major Chemical Emissions and Transfer Volumes

S	ubstance	Atmosphere	Water	Soil	Total Emissions	Transfer Volume
Dimethylacetamide		295	41	0	336	185
Acetone		280	38	0	318	58
Methyl methacrylate		88	52	0	140	275
Propylene		88	0	0	88	0
Dichloromethane		81	0	0	81	5
Dimethyl ether		21	54	0	75	0
Tert-butyl alcohol		53	2	0	54	0
Inorganic cyanide		40	0	0	40	0
N,N-dimethylformam	ide	31	2	0	33	126
Cyclohexane		30	0	0	30	6
Other substances		147	53	0	200	1,449
Total		1,154	242	0	1,395	2,104
(Including revised F	PRTR Law substances)	(617)	(122)	(0)	(740)	(1,360)
	MRC	1,004	200	0	1,204	1,150
Breakdown	Domestic group	44	0	0	44	391
	Overseas group	106	42	0	148	563

# Emissions and Transfer Volumes of MRC-PRTR Substances in Fiscal 2013 (Tons/year)

\*Includes MRC-PRTR substances and substances added under the revised PRTR Law

# Initiatives for Preventing Global Warming



### Amount of Energy Used by MRC (Converted into Crude Oil)

# Energy Consumption per Unit of Production by MRC

Units: Crude oil converted kl/t—Production output converted into base product units (Based on chemicals plant production output at Otake Production Center in fiscal 1990)





\*MRC 1 is the volume of CO2 emissions derived from energy use at the six production centers in Japan.

\*MRC 2 is the volume of CO2 emissions derived from items added to comply with the revised Law Concerning the Promotion of the Measures to Cope with Global Warming and the revised Law Concerning the Rational Use of Energy.

\*Aggregate amounts of domestic on-site Group companies are included in Mitsubishi Rayon proper.

\* The number of Group companies included in the scope of data aggregation has increased from fiscal 2013.



#### CO2emissions attributable to energy use

### Greenhouse Gas Emissions of Fiscal 2013 (Converted into CO2)

Prockdown for figoal 2012 (1 000		Eivo othor		
tons/year)	Energy- derived	Derived from other sources	gases	
MRC	950	247	4.1	
Domestic Group	23	0	0.6	
Overseas Group	1234	494	9.5	

# Initiatives for Reducing Waste





# Environmental Accounting

# ■ Aggregate results for environmental accounting in fiscal 2013

			(Milli	on yen)
Aggregate items establis	hed in the Ministry	of the Environment guidelines	Investment	Cost
		[1] Pollution prevention costs	298	2,438
	(1)Business area cost	[2] Global environmental conservation costs	45	46
		[3] Resource recycling costs	16	1,353
Environmental	(2) Up / Down strea	0	23	
conservation costs	(3) Administration	0	627	
	(4) Social activity of	1	120	
	(5) Environmental	remediation cost	0	80
		360	4,688	

		(Million yen
Aggregate items esta	blished in the Ministry of the Environment guidelines	Investment
	(1) Proceeds from recycling activities	701
Economia honofit	(2) Expense reductions due to energy conservation	476
Economic benefit	(3) Reduction in waste disposal expenses	119
(3) Reduction in waste disp	Total	1,297

	(Million yen)
Wastewater measures costs (disposal costs, etc.) shown as an amount within compliance costs (operation and maintenance expenses) related to pollution control/environmental laws and agreements	116
Waste disposal costs shown as an amount within waste reduction and resource management promotion costs (operation and maintenance expenses)	376

# Basic Information on Environmental Accounting

# **Environmental Accounting in General**

- Scope of aggregation: Costs and benefits of activities mainly aimed at environmental conservation
- Scope of companies: Mitsubishi Rayon Co., Ltd.
- Period: fiscal 2013

# **Environmental Conservation Costs**

<ul> <li>Scope/Classification</li> </ul>	Conforms to the Ministry of the Environment's "The Establishment of an Environmental Accounting System (2000 report)" Cost includes personnel costs. Depreciation costs of facility investments are excluded. Research and developments costs are excluded.
Economic Benefit	
<ul> <li>Scope/Classification</li> </ul>	:Results of environmental and safety-related activities in fiscal 2013, which can be calculated rationally.
•Revenues	:Cash proceeds from the sale of valuable material and trading in scrap materials, etc.

<ul> <li>Energy conservation</li> </ul>	:Amount of energy savings derived from energy conservation initiatives in
	production activities

Waste disposal :Amount of cost reduction compared with the previous fiscal year

# Green Purchasing

Mitsubishi Rayon promotes green purchasing through the purchase of environment-friendly products used internally, including stationery and office equipment.

Green Purchasing Results at Mitsubishi Rayon(Fiscal year)							
		2009	2010	2011	2012	2013	
Dener	Copy paper	100%	96%	100%	95%	97%	
Рарег	Toilet paper	100%	100%	100%         100%         10           100%         100%         10           100%         64%         81%         9           00%         95%         95%         8           102%         94%         86%         6	100%		
	Notebooks	72%	98%	64%	81%	90%	
Stationery	Pens	79%	100%	95%	95%	88%	
	Files	99%	92%	94%	ayon(Fisca 1 2012 % 95% % 100% % 81% % 95% % 86% % 100% % 100% % 100% % 97% % 87%	63%	
	Personal computers	87%	100%	100%	100%	91%	
Office	Printers	100%	100%	100%	100%	78%	
equipment	Facsimiles, copying machines and multifunctional printers	100%	67%	100%	100%	100%	
Other items	Lighting equipment	86%	69%	73%	97%	99%	
Other items	Fluorescent lights	36%	79%	84%	87%	85%	

\*Figures above are totals for Mitsubishi Rayon

# ► Targets for Combining Environment-Related Data

Scope of Environmental data required for aggregation is here.

# **Relationships with Local Communities**

The Mitsubishi Rayon Group contributes to the development of local communities by proactively promoting activities anchored in each community.

### Communicating with Local Communities

### Exchanges with Local Communities

The Group conducts factory tours mainly for government officials and nearby residents as part of its efforts to interact with local communities both in Japan and abroad. These activities provide opportunities to promote understanding of the Group's businesses as well as its environmental and safety measures.



A factory tour being conducted for Toyama City's Hokubu Junior High School PTA (Toyama Production Center)



Vocational experience program for junior high school students during Career Start Week (Otake Production Center)

#### Volunteer Activities by Overseas Group Companies

'Give and Gain Day' is the UK's national day for volunteering. Many volunteers from Lucite International, Group company in UK, joined the event organized by the community. Together with other local companies, employees conducted clean-up activities at facilities managed by volunteer organizations.



Thai MMA ("TMMA"),together with its fellow Thai-based methyl methacrylate ("MMA") production partner, the Siam Cement Group ("SCG") - took part in initiatives carried out in nearby communities that included improving the area, fencing of the Health Center, and improving and renovating school buildings. Each activity was funded by SCG in order to support the initiatives of both the national and local governments. Looking ahead, TMMA and SCG will continue working together to communicate with and support local communities.



#### Exchanges with Local Communities through Sports

Each production center and Group company makes its grounds, gymnasiums and other facilities available to the local community, and they are used by many local residents. In addition, Group companies organize sports tournaments in an effort to foster exchanges with local residents and promote the development of young people.

#### Clean-Up Activities

To keep local communities clean, Mitsubishi Rayon carries out clean-up activities in neighboring areas on a regular basis. Efforts are not limited to internal activities as we join clean-up campaigns organized by local governments and non-profit organizations. Through these efforts, we are undertaking environmental beautification activities that reflect local interests.



Clean-up activities near the Asakura River (Toyohashi Production Center)

# Activities for Nurturing and Educating the Next Generation

The simple questions "Why?" and "How?" that children ask are the origins of manufacturing. Wishing to convey the wonders and delights of science using its products and everyday items, the Mitsubishi Rayon Group conducts various science experience lessons.

### Science experience lessons

Volunteers from Mitsubishi Rayon Head Office and the Yokohama Production Center participated as members of the Mitsubishi Chemical Holdings Corporation Group in the Chemistry Experiment Show in summer held by the Yume Kagaku 21 Committee and hosted by the Science Museum in August 2014. The volunteers held a practical experiment lesson where children learned about the workings of batteries while making a battery from fruit, giving them a taste of the fun of doing experiments and the fascination of doing chemistry.



In addition, the Mitsubishi Rayon Group company, ACRYSUNDAY Co., Ltd., holds ACRY Club workshops at home center outlets nationwide. At the workshops, parents and children experience the basic processing of acrylic resin sheets and participate in a hands-on workshop to complete making one product, thereby enjoying the easy and fun aspects of processing.

At the Otake Production Center, we hold a workshop for local elementary school students each year at the Otake Ran-Ran College organized



by Otake City. We utilized Mitsubishi Rayon's strengths under the theme of "having fun with plastic," by having the children make luminous boxes using 《ESKA》 plastic optical fiber. Thirty-six students from the city participated, each creating their own unique luminous box.



Supporting the Soalon Design Contest

Mitsubishi Rayon Textile Co., Ltd. supports a design contest for Bunka Gakuen students, who are expected to eventually play an active role in the fashion industry. Mitsubishi Rayon Textile supplied «Soalon», a rare triacetate fiber that is environmentally friendly, for the textiles used in the contest.



# Supplying Carbon Fiber to Schools Competing in Japan's Student Formula SAE Competition

Lightweight and strong, carbon fiber has gained attention as a material that enables massive weight reduction. In Student Formula SAE Competition of Japan, teams of students compete in a test of their overall manufacturing capabilities as they plan, design and produce car bodies. Mitsubishi Rayon supplies carbon fiber as a material for the car body and parts to Toyohashi University of Technology's Car Society, one of the competitors.



# Relationships with Customers/Product Safety

The Mitsubishi Rayon Group is working to ensure the safety of its products to deliver the highest level of quality possible to customers. We are also endeavoring to communicate with a greater number of customers through events and exhibitions.

# Relationships with Customers



### SDS

In the sale and delivery of chemical products, the Mitsubishi Rayon Group provides information on the properties, proper handling and disposal of the products by also supplying safety data sheets (SDSs).

#### Promoting GPS Activities

As a member of the Mitsubishi Chemical Holdings Corporation Group, Mitsubishi Rayon is actively promoting a global product strategy (GPS)\* focused on the voluntary initiative in the chemical industry of risk-based chemicals management throughout supply chains and disclosure of information of risk management on chemical products.

Mitsubishi Rayon conducts ordered risk assessments of the chemical substances that it manufactures and adopts appropriate management based on the results. Risk assessments are summarized in Safety Summaries and published.

So far, we have published Safety Summaries for eight substances. We will continue to conduct risk assessments going forward.

\* Global product strategy (GPS): A voluntary initiative under which companies minimize the risks inherent in chemicals throughout their supply chains by conducting risk assessments of their chemicals, implementing appropriate management in light of the identified risks, and releasing information on the safety and risks of products to customers and society at large.

#### Providing Technical Services and Information to Customers

We comply with the differing legal regulations of the countries in which we do business while disclosing product material specifications to meet customer needs. Moreover, we provide such services for fiber processors as preparing technical manuals, dispatching technicians and developing quality management databases.

#### Cooperation with Green Procurement

Upon request, we provide customers with information on hazardous substances contained in chemical products.

#### Open Laboratory for DNA Chips

In April 2001, we established a special open laboratory for DNA chips within our Yokohama Corporate Research Laboratories as a forum for information exchange with customers. Since then, we have introduced and demonstrated methods for using 《Genopal》 and peripheral equipment, as well as receiving information from customers about their opinions and needs.

#### Customer Service Hotline

We have established a toll-free hotline to field opinions, inquiries, and complaints from customers in relation to our (Cleansui) home water purifiers.

#### Participation in Exhibitions

The Mitsubishi Rayon Group is working to initiate direct dialogue with a greater number of customers by proactively taking part in exhibitions. To provide products and services that achieve greater customer satisfaction, the Group reflects feedback from customers in its product safety and quality improvement initiatives.



Exhibition in PLASTIC Osaka Highly-Functional Plastic Expo

# Proceeding with REACH<sup>\*</sup>Registration

The Group completed the registration of six high-production substances by the 2010 deadline and is currently preparing to register other substances by the 2013 deadline in cooperation with consortiums in Europe. Since 2010, we have been promoting the sharing of REACH regulation-related information with Mitsubishi Chemical Corporation. Also, we are advancing preparations for REACH registration through intensive collaboration with Lucite International as the Mitsubishi Rayon Group's representative in Europe.

\*REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) is an EU regulation to protect human health and the environment.

# Ensuring GHS<sup>\*1</sup>Compliance in Individual Countries

Although the Group has completed the incorporation of Japanese GHS requirements into its SDS<sup>\*2</sup>, many East Asian countries, such as China, South Korea and Taiwan, have formulated their own GHS regulations as part of their efforts to establish effective legal frameworks. While establishing GHS information access routes, we will appropriately address GHS policies being formulated in various countries.

\*1 GHS: Globally Harmonized System of Classification and Labelling of Chemicals

\*2 SDS: Safety Data Sheet

### Safety of Products



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# **Relationships with Suppliers: Procurement**

# CSR Procurement

The Mitsubishi Rayon Group acts in line with its basic policy of fair and transparent transactions. Contributing to the realization of better lives on a sustainable basis, the Group formulated the CSR Procurement Policy to gain the cooperation of suppliers and build healthy business relationships with them.

# **CSR** Procurement Policies

The Mitsubishi Rayon Group's corporate philosophy is "Best Quality for a Better Life." "Best Quality" refers to our products, services, and the quality of each individual employee, while "Better Life" is meant to imply all people in society, including all of our stakeholders.

In keeping with this philosophy, we keep a very open attitude to suppliers when purchasing and procuring raw materials, components and construction work, and operate on a basic policy of fair and transparent transactions.

We promote CSR activities Group-wide in order to realize our corporate philosophy, and in our purchasing and procurement activities, the cooperation of our suppliers of products and services is essential. We ask them to understand the main tenets of CSR procurement and to cooperate with us in order to contribute to a richer future and realize a sustainable society.

#### Compliance with laws and social standards

We will maintain high ethical standards and adopt a basic stance of complying with laws and social standards to conduct sound purchasing and procurement and we will endeavor to operate fairly and equitably.

2. Securing the ecological soundness and safety of products purchased We will always place top priority on environmental considerations and maintenance of safety when purchasing and procuring products and services.

#### Respect for human rights and improvement of working conditions

In purchasing and procurement, we will respect the fundamental human rights of workers and carry out our operations without unjust discrimination. In parallel, we will strive to ensure the safety and health of all those working in Mitsubishi Rayon Group workplaces and to improve working conditions.

#### 4. Development of partnerships

We will maintain mutual relationships of trust with all the business partners under the fundamental awareness that we are working together, mutually for business implementation and for conducting fair and transparent purchasing and procurement.

#### 5. Requests for business partners

In promoting CSR activities of the Mitsubishi Rayon Group, we will ask our suppliers to undertake appropriate corporate activities with respect to the following points.

(1) Compliance with laws and social standards

(2) Provision of products and services whose ecological soundness and safety have been ensured

(3) Initiatives for raising respect for human rights and improving working conditions
 (4) Provision of satisfactory quality and prices, reliable delivery periods and timely information

### CSR Procurement Questionnaire mi

In fiscal 2013 we provided feedback on the CSR Procurement Questionnaire that we have been conducting.

Moreover, through the main group companies in Asia, we conducted our first CSR Procurement Questionnaire for Asian regions (China, South Korea, Thailand), which covered approximately the same material as the one we use in Japan.

Overall, suppliers in Japan tended to give themselves high self-evaluations.



In fiscal 2014-2015, we will visit around 10 Japanese suppliers that had low self-evaluations, with the goal of achieving mutual understanding of CSR activities and raising their awareness.

Looking forward, Mitsubishi Rayon will work with Mitsubishi Chemical Holdings Corporation and other operating companies to deepen communications with suppliers even further. In addition, we plan to share with suppliers rules based on CSR procurement guidelines that we are formulating. Looking ahead, we will formulate standards for selecting suppliers in line with such factors as legal compliance, human rights, labor, safety and hygiene.

# **Relationship with Suppliers: Logistics**

### CSR Logistics

The Mitsubishi Rayon Group acts in line with its basic policy of undertaking fair and transparent transactions. Contributing to the realization of better lives on a sustainable basis, the Group formulated the CSR Logistics Policy to gain the cooperation of suppliers and build healthy business relationships with them.

# **CSR** Logistics Policies

The Mitsubishi Rayon Group's corporate philosophy is encapsulated in "Best Quality for a Better Life." "Best Quality' refers to our products, services, and the quality of each individual employee, while "Better Life' indicates all people in society, including all of our stakeholders.

In line with this philosophy, we keep a very open attitude to suppliers in our logistics activities, and operate with a basic policy of conducting fair and transparent transactions.

We promote CSR activities Group-wide in order to realize our corporate philosophy, and in our logistics activities, the cooperation of our suppliers of services is essential. We ask our suppliers to understand the main tenets of CSR logistics and to cooperate with us in order to contribute to a richer future and realize a sustainable society.

#### 1. Compliance with laws and social standards

We will maintain high ethical standards and adopt a basic stance of complying with laws and social standards to conduct sound logistics and we will endeavor to operate fairly and equitably.

#### 2. Securing ecological soundness and safety in logistics activities

We will always place top priority on environmental considerations and maintenance of safety when conducting logistics activities.

#### 3. Respect for human rights and improvement of working conditions

In logistics, we will respect the fundamental human rights of workers and carry out our operations without unjust discrimination. In parallel, we will strive to ensure the safety and health of all those working in Mitsubishi Rayon Group workplaces and to improve working conditions.

#### Development of partnerships

We will maintain mutual relationships of trust with all business partners under the fundamental awareness that we are working together, mutually for business implementation and for conducting fair and transparent logistics activities.

#### 5. Requests for business partners

In promoting the CSR activities of the Mitsubishi Rayon Group, we will ask our suppliers to undertake appropriate corporate activities with respect to the following points.

(1) Compliance with laws and social standards

(2) Provision of logistics services whose ecological soundness and safety have been ensured

 (3) Initiatives for raising respect for human rights and improving working conditions
 (4) Provision of satisfactory logistics quality and prices, reliable delivery periods and timely information

CSR Logistics Questionnaire in the second second

In fiscal 2013, we also conducted our fourth CSR Logistics Questionnaire for logistics companies and provided feedback. At the same time, continuing from the previous fiscal year, we conducted surveys on logistics companies' energy conservation initiatives. The survey results confirmed that respondents were implementing new initiatives that include obtaining qualifications, particularly the Safe Workplace (G-Mark) Certification and Green Management Certification, as well as introducing eco drive recommendations, and energy saving vehicles and equipment.

In providing feedback, we introduced the energy saving measures of each logistics company, and promoted replication of exemplary qualifications and activities between all companies. We also communicated our intention to include each company's stance on energy-saving initiatives in our supplier evaluations.



TM TERMINAL CO., LTD. (right) being awarded a prize for zero transport accidents at the Hazardous Materials Logistics Safety Conference

Through main Group companies in Asia, we conducted our first CSR Logistics Questionnaire for Asian regions (China, South Korea, Thailand), which covered approximately the same material as the one we use in Japan. Overall, the self-evaluation results were mostly the same as in Japan.



In fiscal 2014-2015, we will visit Japanese logistics companies that had low self-evaluations, with the goal of achieving the mutual understanding of CSR activities and raising their awareness. At the same time, we plan to hold discussions with them on ways to reduce CO2 emissions.

# **Relationships with Employees**

In order to maintain both sustainable business growth and employee satisfaction, the Mitsubishi Rayon Group respects the diverse talents of its employees while creating workplaces that offer them opportunities to achieve their ambitions and fully display their skills.

### Human Resource Development

Based on its view that the capabilities of people and organizations are the key source of corporate growth and competitive ability, the Mitsubishi Rayon Group views human resource recruitment, training and application as important management challenges, and focuses its efforts on these areas.

#### Basic Policy for Employing Recent Graduates and Mid-Career Workers

The conditions in which companies operate are changing on a daily basis along with social frameworks. The Mitsubishi Rayon Group continues to hire a diverse array of promising individuals in order to survive under these conditions and to achieve the Group's goals.

### Training Programs

The Mitsubishi Rayon Group supports employees' efforts to develop their capabilities and skills by combining daily on-the-job (OJT) training with training programs and activities that assist in personal development. The Mitsubishi Rayon Group has adopted human rights education, legal compliance, thorough enforcement of corporate ethics, the promotion of safety and environmental management, and the strengthening of mental health care, as common themes of the stratified training programs it has designed for new employees and managers.

In addition, in view of the Group's increasing global operations, it is increasing its efforts to train individuals who can serve as managers based on their understanding of the cultures and systems of the regions where they are assigned.

### **Main Training System**

- Strengthen management capabilities and organizational strength
  - Objective-based management (evaluator) training
    - Global leadership training
    - Global business training
- Stratified training extending from new employees to newly appointed managers
- Objective-specific training
  - Human skills
  - Mentoring, interpersonal skills training (team-building, coaching), life plan training
  - Technical skills

Manufacturing leader training, production engineering courses (foundation studies, applied studies)

- Coping with globalization
  - Cultural understanding, language training
- Various self-awareness training



The above is an outline only. »Enlarged Image

#### COM-PAS Target-based Personnel Evaluation System

The Mitsubishi Rayon Group takes the view that strong unity of direction across all Group members based on the Corporate Behavior Charter is critical for its sustained development in the years ahead. Based on this view, the Group has introduced a personnel performance evaluation system that stimulates communication within its organization, provides employees with common organizational targets, and accurately rates individuals who work hard and succeed in achieving the targets. This system is nicknamed COM-PAS (Communication, Plan, Action & Success). To make the system more effective, the Group offers manager-focused training to evaluators on an annual basis in order to increase the fairness, persuasiveness and transparency of the evaluations. The Mitsubishi Rayon Group believes that this target-based personnel management process, from target establishment to performance evaluation, maximizes the capabilities of individual employees and, by extension, allows the entire Group to display its organizational strength.



Target-based (evaluator) training

#### Self-Initiated Career Development

To promote effective human resource management, it is important for each individual Mitsubishi Rayon employee to demonstrate their capabilities in full. We encourage employees to visualize their future roles through the creation of career plans, which also fosters their awareness of self-initiated skills development. Moreover, in order to increase our organizational strength, we systematically compile the career plans and work histories of each employee for use in various aspects of human resource management.

#### Internships

Mitsubishi Rayon offers an internship program that is available mainly to students from universities, graduate schools and technical colleges. Each Mitsubishi Rayon production center receives 10 to 30 students every year, which gives the students the opportunity to gain firsthand experience in manufacturing and research on-site and to consider their career options. Mitsubishi Rayon makes the internship program available to foreign students in Japan as well.

# Work-Life Balance

### Measures for Supporting Efforts to Balance Work and Family Life

Since 2005, the Mitsubishi Rayon Group has established and implemented its Action Plan for General Business Operators in accordance with the Act on Advancement of Measures to Support Raising Next-Generation Children. This action plan helps us boost corporate vitality and contribute to society through the development of better working conditions for Group employees, which includes supporting their efforts to balance work and family life. With the Fourth Action Plan (fiscal 2012—fiscal 2013) we have also been certified by the Tokyo Labor Bureau as a General Business Operator Conforming to Standards, and in 2014 we received the Kurumin Certification Mark for a third time following on from 2008 and 2010. The measures of our latest (Fifth) action plan are as follows.

# Action Plan for General Business Operators in accordance with the Act for Measures to Support the Development of the Next Generation (Fifth)

The following action plan has been formulated to enable all employees to reach their full potential by achieving a harmonious balance between their work and family life, and by creating positive working environments.

### 1. Four-year plan from April 1, 2014 to March 31, 2018

# 2. Overview

#### <Objective One>

Create an environment that makes it easier for male and female employees to balance work and family life and, in turn, fosters an ongoing sense of enthusiasm toward for their duties The following measures will commence from April 2014:

- Create an environment that will dispel employees' concerns over balancing work with child rearing and enable them to work with a vision for the future
- Encourage male employees to participate in child rearing
- Promote understanding regarding balancing both work and nursing care

#### <Objective Two>

Undertake measures to create enthusiastic and dynamic workplaces The following measures will commence from April 2014:

- Implement measures to reduce overtime work and encourage employees to take paid holidays
- Conduct initiatives to realize a highly productive and efficient, flexible working style that is not tied to a fixed approach
- Undertake measures to increase mutual understanding and cooperation among employees with diverse backgrounds

#### <Objective Three>

Implement measures that foster the development of the next generation The following measures will commence from April 2014:

- Provide opportunities for children to tour workplaces and so forth
- Provide opportunities for youth to youth think about what's it like to be a working adult and receive hands-on work experience



Next Generation Kurumin Certification Mark

In addition, having positive evaluations for establishing and successfully implementing flexible childcare and nursing systems that far exceed legal standards, the Group received the Tokyo Labor Bureau Director's Excellence Award from the Ministry of Health, Labour and Welfare in 2010 at the Commendations for Equal and Balancing Promotion Companies (Family-Friendly Company category).



Booklets distributed to employees to promote efforts for improving work-life balance

Almost 100% of employees who gave birth in recent years have taken childcare leave. Childcare leave is granted through consultations with three individuals—the individual requesting leave, her supervisor and the personnel manager—in order to create an atmosphere that enables employees to fulfill their family responsibilities while being able to reach their full potential at work. Maintaining this type of work-life balance goes a long way towards alleviating anxiety and encourages employees to look forward to returning to work. Thanks to these initiatives, nearly all employees who took childcare leave have resumed their duties.

In addition to enhancing work-life balance support systems, we are promoting the realization of continuous work-life balance by cultivating a corporate culture that values mutual respect and understanding for various lifestyles and values.

### Measures for Supporting both Work and Nursing Care

To date, Mitsubishi Rayon has maintained nursing care support programs centered on nursing care leave, shortened working hours for nursing, and lifestyle financial assistance (nursing). These programs exceed legal standards by a significant margin. In partnership with external NPOs, additional support is provided by enhancing information provision systems intended to alleviate nursing care-related anxiety and difficulties. Through these efforts, we are striving to ease the mental and physical burdens placed on employees providing nursing care and create an environment that makes it easy to engage in both work and nursing care.

# Welcome Back Scheme

Mitsubishi Rayon maintains the Back-To-Work Registration Scheme to give former employees who had left voluntarily the opportunity to return to work with the Company. Registration is open to all former employees regardless of their reason for leaving, including childbirth and nursing.

### For a More Enjoyable Working Environment

### Human Rights Protection

The Mitsubishi Rayon Group expresses its fundamental polices on human rights in the Corporate

Behavior Charter and Compliance Behavior Standards, and has formulated the Human Rights Enlightenment Policy. The Group respects human rights and strives to create fair working environments for employees. In addition, the Group is seeking to raise awareness of the need to respect human rights by giving human rights education lectures in various Group employee training programs.

With regard to sexual harassment and power harassment, the Mitsubishi Rayon Group has spelled out its position of zero tolerance in its employment regulations. The Group is raising awareness of these issues through in-house magazines and various employee training programs. In addition, the Group has set up a compliance counseling desk, as well as harassment counseling desks in head offices, branch offices and production centers, and has established a committee to formulate countermeasures in a bid to develop a system able to rapidly respond to any form of harassment.

### Employment of People with Disabilities

As part of the Mitsubishi Rayon Group's CSR activities, it makes Group-wide efforts to hire more people with disabilities and develop facilities to accommodate them in an attempt to achieve and exceed the statutory requirement.

# Reemployment policy

The Mitsubishi Rayon Group reemploys workers in accordance with the intention of the revised Act on Stabilization of Employment of Elderly Persons. In principle, all employees, including managers, are eligible for reemployment after the age of retirement based on the conditions specified by the Group. The Group ensures compatible working styles for reemployed individuals so that they continue to feel as motivated as ever.

#### Mentoring System

Mitsubishi Rayon has introduced the Mentorship System, which encourages senior employees to provide ongoing support and guidance to new career employees in order to help them adapt to the work environment, encourage their development into full members of society and improve their job performance.

#### Support for Resuming Work after Forced Absences Due to Illness and Injury

It is important to prevent physical and mental illness and injury through lifestyle improvements and everyday care. If employees do become ill or injured, it is essential to create an environment that allows them to concentrate on their treatment for the required length of time and then return to work without any problems. Accordingly, Mitsubishi Rayon offers follow-ups to sick employees in cooperation with occupational physicians while they are undergoing treatment. In addition, we produce a work resumption program for each employee following his or her application to resume work. Based on the program, Mitsubishi Rayon workers can return to work in two stages, which consist of working on a trial basis and shorter working hours upon returning to work. These support initiatives allow employees to gradually build up to a return to full-time work after a required preparatory period.

### Occupational Health

In order to promote Group-wide activities concerning hygiene and safety in the same manner as safety and the environment, the Health and Hygiene Group was established in 2012, which oversees initiatives in this area. In cooperation with occupational physicians and occupational health staff members, the Health and Hygiene Group devises activity principles and policies as well as common measures regarding operating environments and methods, and employee health maintenance and improvement.

In addition, internal policies are formulated in accordance with the Industrial Safety and Health Act and other health-related laws to proactively promote measures in such areas as overwork-related health disorder prevention and mental health.

Moreover, the Group has recently introduced an independent health examination system in order to

develop an environment that helps prevent employee illness, enabling employees to work safely anywhere.

Looking ahead, the Mitsubishi Rayon Group will expand in stages the scope of its health-related activities to all Group companies, particularly those located overseas. Through these initiatives, the Group is supporting the realization of KAITEKI workplaces where all employees can continue working in a safe, secure and healthy manner.

# **CSR** Report

# KAITEKI Report 2014

The Mitsubishi Chemical Holdings report can be accessed here. KAITEKI Report 2014

# Previous issues of the Mitsubishi Rayon CSR Report

The Group's CSR activities in fiscal 2013 are introduced on this website.

\*Please be aware that large files may take some time to open.





(PDF:4.3 MB)

From fiscal 2011, the method of reporting on CSR initiatives changed from a printed format to a website.

2012 Report

Reporting period: April 1, 2011-March 31, 2012 However, some reported examples may contain content from after April 1, 2012. This PDF has been generated from HTML format. 2012 Report m

2013 Report

Reporting period: April 1, 2012-March 31, 2013 However, some reported examples may contain content from after April 1, 2013. This PDF has been generated from HTML format. 

# **Corporate Governance**

### **Basic Perspective**

The Mitsubishi Rayon Group is working to enhance its corporate governance by undertaking fair business activities in compliance with laws and with a high standard of corporate ethics.

# **Fundamental Policy on Internal Control System**

The Company hereby establishes its "internal control system" as below, which shall be reviewed and improved going forward as necessary. The purpose of this fundamental internal control system is to contribute to the achievement of MRC's corporate philosophy and to maximize the Company's corporate value by securing proper execution of business activities, ensuring efficiency of business activities and managing business risks.

- 1. System to ensure business operation by Board Directors ("Directors") to comply with laws and the Articles of Association
- Directors shall act as a role model for others and execute their duties in accordance with the "Corporate Behavior Charter" whose purpose is to achieve the Company's corporate philosophy.
- Directors shall not only make business decisions but also make business reports and share information necessary for execution of Company's business at regular Board Meetings and at special Board Meetings.
- Directors shall mutually monitor and oversee other Directors' execution of duties to ensure entire legal compliance thereof. Should Director(s) be in violation of laws or Articles of Association committed by other Director(s), such instances must be immediately reported to the Corporate Auditors and to the Board and corrective measures shall be taken.

#### 2. System to store and manage information related to business execution by the Directors.

- The Company shall establish the "Important Documents Retention Regulations" and place appropriate controls on important documents related to business execution by the Directors (e.g. Shareholders' Meeting minutes, Board Meeting minutes, etc.).
- The Company shall establish the "MRC Information Security Committee," which shall supervise MRC Group's information security and management activities.
- The Company shall appropriately manage all of the MRC Group's information assets by establishing a basic information management policy and the "Mitsubishi Rayon Group Information Security Policy" and "Information Asset Management Regulations."
- Online Document Management System consisting of online "Bulletin Board", online "Koshin", etc. shall be utilized to transmit promptly and accurately the minutes of the Board Meetings and resolutions of the Management Meeting and other matters to be announced to other MRC Group companies.

### 3. Regulations and other system to manage risk of loss

The Company shall capture and categorize external risk factors; political and economic conditions, natural disasters and other significant risks concerning overall business operations i.e. production, sales, products, finances, R&D, systems, etc. The Company shall implement a system to prevent risks appropriately and mitigate risks.

- The Company shall establish the "Risk Management Committee," which shall supervise MRC Group's risk management activities.
- The Company shall specify managerial responsibilities and management methods concerning the important risks related to the Company's business operations in the "Risk Management Regulations", and Directors and the head of each department shall take managerial responsibility for prevention and treatment of material risks in the business operations assigned to them. As to individual operational risks, the Company shall standardize business activities in the "Business Operations Regulations" and put the risk prevention system in operation on a daily basis.
- As to disaster, accident, incident and other crisis management, the Company shall, pursuant to the "Risk Management Regulations," set up a Crisis Task Force as needed for organisational response. The Company shall prepare a risk management system for all conceivable risks, and develop and update the Crisis Management Procedures.

### 4. System to ensure efficiency of business operation by the Directors

- In addition to the regular and special Board Meetings, the Management Meeting, chaired by the President, shall be held to deliberate important matters concerning business operations of all the Group Companies and Departments for the purpose to improve the efficiency of performance of respective duties of each of the Directors.
- The President shall promptly transmit the resolutions by the Board and the decisions by the Management Meeting to all Executive Officers and concerned departments using the online bulletin board. Operations based on those resolutions and decisions shall be executed quickly by the employees in accordance with the authorities and responsibilities defined by the "Office Organisation Rules" and "Segregation of Duties Rules".
- The Company shall establish the "CSR Management Meeting," which oversees the activities of the Risk Management Committee, Safety, Environment & Quality Assurance Committee, Compliance Committee, and Information Security Committee. Each such committee shall enhance efficient business operations and compliance systems.

# 5. System to ensure business operation by employees to comply with laws and the Articles of Association

- The Company shall endeavor to spread the "Corporate Behavior Charter" and the "Compliance Code of Conduct," and shall disseminate employees the significance and purposes of all types of internal regulations concerning the execution of other business operations and improve the employees' understanding thereof.
- To further ensure strict adherence to the "Corporate Behavior Charter" and compliance requirements, the Company shall establish the "Compliance Committee". The "Compliance Committee" shall be the cornerstone of the compliance framework. Each of the Executive Officers, General Managers, and Directors shall promote compliance activities within their organisations on a daily basis in accordance with the policies implemented by the "Compliance Committee".
- The Company shall establish the "Safety, Environment & Quality Assurance Committee," which shall oversee the risk management related to safety, environment and quality assurance and compliance activities in accordance with "Safety, Environment & Quality Assurance Regulations".
- Audit Office shall submit internal audit reports to the President and to the concerned departments in accordance with the "Internal Audit Regulations" and exchange information with the Corporate Auditors.
- Should Director(s) discover serious violations of laws and material facts concerning compliance, such instances must be immediately reported to the Corporate Auditors, the Board, and the Management Meeting.
- The Company shall establish the Compliance Hotline System pursuant to the "Compliance Hotline System Regulations" for early discovery of violation of compliance issues and proper treatment thereof.

# 6. System to ensure proper operation by the Corporate Group

- The Company and its Group companies shall adhere to the "Charter of Corporate Behavior" and related policies etc. set forth by its parent company Mitsubishi Chemical Holdings Corporation and seek its approvals on, and report to it, any important management matters.
- The Company shall ensure that all the Directors and employees of both the domestic and overseas Group Companies comply with the "Corporate Behavior Charter" and the "Compliance Code of Conduct" as their common norm.
- Group Company President (CEO) shall oversee and be responsible for the compliance activities of such group company in accordance with the "Corporate Behavior Charter" and the "Compliance Code of Conduct".
- In order to properly manage the operations of Group Companies, the Company shall establish the "Group Companies Management Regulations", which shall apply to all Group Companies. While honouring the independent activities of Group Companies, the Company shall ensure it receives reports and notifications from Group Companies, and provide guidance, etc., to Group Companies.
- Risk management at each Group Company shall be incorporated into the risk management system of its parent company.
- The Company shall regularly hold meetings that are attended by its Group companies' presidents and share the Online Document Management System consisting of online "Bulletin Board", online "Koshin", etc.
- In addition to as provided for in Paragraph 5. (6), MRC shall position the Compliance Hotline System as an internal reporting system for all Group Companies and as a reporting channel for cases of compliance issues with the business management or management guidance of the parent company.
- Internal audit of Group Companies shall be conducted in accordance with the "Internal Audit Regulations". The Audit Office shall share information with Corporate Auditors of Group Companies through communication and consultation concerning auditor's duties.

### 7. System to ensure credibility of Financial Reporting

 To ensure reliable financial reporting, MRC shall develop and operate an internal control system and report the results of assessments of its effectiveness based upon the "Operation Rules for Internal Control over Financial Reporting".

#### 8. Matters for Employees that assist duties of Corporate Auditors

- MRC shall appoint audit assistants who will assume the position in charge of support auditing duties and responsibilities of Corporate Auditors.
- When deciding personnel issues such as appointment, evaluation, transfer, etc. of audit assistants, prior consent of the Corporate Auditors shall be required and such decisions shall remain independent from the Directors.
- The audit assistants shall follow corporate auditors' instructions and orders and assist in execution of corporate auditors' duties.

#### 9. Reporting systems to Corporate Auditors.

- With regard to important issues concerning operation of business such as matters reported to or resolved at the Management Meeting, the personnel in charge for such issue shall be caused to provide explanation to the Corporate Auditors upon request by the Corporate Auditors to enhance effectiveness of the report to the Corporate Auditors.
- The Company shall secure a system whereby Corporate Auditors is entitled, in addition to receiving reports from the Directors, to attend important meetings and express their opinions, and conduct separate meetings with Management Meeting members, etc. including the President and the Corporate Auditors on a regular basis to collect information.
- The Company shall mandate the Internal Control Department to report to the Corporate Auditors concerning each instance raised through the Compliance Hotline System.

- The Company shall have the responsible department(s) report to Corporate Auditors concerning status of implementation of the internal control system approved at the Board Meeting, and whether such system is functioning effectively. The status of risk management shall also be reported regularly to the Corporate Auditors.
- The Company shall ensure directors or employees not to be given any disadvantageous treatment because of the reports that they make to the corporate auditors by setting forth a relevant provision in "Rules on Compliance Consultation Desks."

### 10. Other systems to ensure effective Audit by Corporate Auditors

- Corporate Auditors, Accounting Auditors and Audit Office shall regularly exchange information. The Company shall ensure a system whereby Corporate Auditors, Accounting Auditors and Audit Office can maintain close liaison, conduct effective audit, and exchange theme specific information when carrying out audit work. In conducting internal audit, the Audit Office shall maintain close contact and coordination with the Corporate Auditors and cooperate with Corporate Auditors' audit. In addition, the Corporate Auditors shall focus on strengthening the effectiveness of the audit system for auditing Group Companies including overseas subsidiaries and affiliates.
- The Company shall be responsible for the payment of costs, among the costs paid by corporate auditors, which are deemed adequate to regard as costs necessary for conducting audit.



2015/06/23

# Compliance

The Mitsubishi Rayon Group is expanding its autonomous activities to steadily raise the compliance awareness of every employee by positioning compliance in its corporate endeavors as one of its top priorities and through the formulation of the Business Code of Conduct and Compliance Code of Conduct.

# **Compliance promotion system**

The Mitsubishi Rayon Group has established the Compliance Committee to determine the group's policies and plans regarding compliance promotion activities under the direction of the Chief Compliance Officer. At the same time, for the purpose of upgrading the group's compliance promotion activities, the group has assigned employees in charge of compliance promotion who manage the progress of compliance promotion activities, confirm the effectiveness of such activities, and develop improvement measures, etc. Furthermore, the group aims to enhance its compliance promotion activities by developing and improving compliance-related rules and monitoring circumstances relating to disciplinary actions, reports provided to compliance consultation desks, etc.

### **Compliance Promotion System**


#### Thorough Compliance Education, Training and PR

We make every effort to regularly conduct education, training and PR at each workplace to fully instill an awareness of shared values and our Business Code of Conduct in each employee.

Every year, basic compliance training via e-learning is conducted specifically for assistant sales managers and new managers in order to test their knowledge and understanding of compliance in such areas as customers, partners, competitors and society. In addition, we hold workshops for approximately 400 managers and group leaders given their key role in promoting compliance. The workshops focus on increasing one's own sensitivity towards compliance and becoming more attuned to the latest information on this topic. We also conduct group discussions mainly on workplace issues with the purpose of raising awareness of compliance among employees and deepening communication during daily operations at every workplace.

Using internal databases, we publish the Compliance Report every month to showcase good compliance actions as well as publicize such issues as relevant laws and behaviors subject to disciplinary action. The Compliance Report serves as part of our employee education and awareness raising activities.

## **Compliance Awareness Survey**

In order to confirm the status of compliance promotion, the compliance awareness survey was conducted for the first time targeting Mitsubishi Rayon employees in conjunction with each Mitsubishi Chemical Holdings Group company. Survey results are conveyed to employees, used to confirm current compliance status and promote future compliance promotion activities.

### **Compliance Consultation Desk**

In order to rapidly identify and appropriately address compliance infringements, the Mitsubishi Rayon Group has set up two external compliance consultation desks staffed by attorneys and operated by a specialist management company and two in-house desks staffed by corporate auditors and operated by the Internal Control office. All of these desks form a consultation and reporting system that the Company utilizes in its efforts to appropriately manage and promote compliance. The privacy and human rights of everyone using this service is protected, the information gathered is not handled in a disadvantageous manner, and steps are taken under the direction of the Chief Compliance Officer (CCO) to remedy problems as soon as possible.

### **Compliance Activities in Overseas Group Companies**

The legal framework, culture, and social system are different in each country or area, and therefore, it is necessary to carry out compliance promotion activities that meet the circumstances of each country or area. Mitsubishi Chemical Holdings America Inc. in North America, Mitsubishi Chemical Holdings Europe GmbH. in Europe, Mitsubishi Chemical Holdings (Beijing) Co. and other regional supervisory companies of the Mitsubishi Chemical Holdings Corporation group in China, and key companies in other Asian countries are playing a central role in providing training and e-learning services to managers and employees at group companies. In addition, Mitsubishi Rayon (Shanghai) Co. is developing and promoting compliance plans in China.

# **Risk Management**

The Mitsubishi Rayon Group is aware that in order for the Group to meet public demands and sustain its development, it is essential for it to establish a mechanism for thoroughly understanding and managing various key risks both within and outside its business, in other words a "risk management system." With this awareness, the Mitsubishi Rayon Group has undertaken the following activities for managing risks.

## **Risk Management System**

The Mitsubishi Rayon Group's risk management initiatives respond to both important operational risks from a companywide perspective and risks inherent in each business activity undertaken by the Group.

#### (1) Risks That Significantly Impact Operations

Taking into account the social environment and other factors, the Risk Management Committee sets important companywide risks yearly and appoints the competent department to implement key measures in response to each risk.

## (2) Risks specific to each department

Each department, division, production center, plant, or laboratory develops its own risk measures in accordance with the company-wide risk management standards and manages risks with a bottom-up approach.

Specifically, each department, division, production center, plant, or laboratory is endeavoring to reduce risks by implementing the PDCA (plan-do-check-act) cycle consisting of (1) identifying risks, (2) developing risk measures, (3) implementing risk measures, (4) assessing the effectiveness of risk measures, and (5) carrying forward existing risk measures to the next year and creating new measures.

For each risk, the Audit Office checks the effectiveness of activities to develop and implement risk measures, aiming to improve the level of risk management activities. The progress of risk management activities is managed using a database system, with the aim of effectively and efficiently carrying out risk management operations by sharing risk information within the group, including overseas group companies. In addition, the level of risks identified is evaluated based on a matrix consisting of the degree of influence and the frequency of occurrence, and the results of this evaluation are reported to the Risk Management Committee.

#### **Risk Management Chart**



#### Risk management activities at overseas group companies

We are facing a need to carry out global business operations, covering global markets, by promoting cooperation among production and marketing centers in Japan, Asia, the U.S., Europe, and other countries and regions in the world. Consequently, from the perspective of securing the soundness of business management, it is becoming more and more important to develop and strengthen risk management and corporate governance functions.

The Mitsubishi Rayon Group manages risks on a unified, group-wide basis, covering both domestic and overseas group companies. For overseas areas where there are many group companies, and a high level of risk management is required, the group is carrying out risk management activities together with Mitsubishi Chemical Holdings America Inc. (in North America), Mitsubishi Chemical Holdings Europe GmbH. (in Europe), and Mitsubishi Chemical Holdings (Beijing) Co. (in China) and other regional supervisory companies of the Mitsubishi Chemical Holdings Corporation group. Furthermore, one of the most important challenges regarding the Mitsubishi Rayon Group's business operations is to develop and strengthen risk management and corporate governance functions in China. The group is dealing with these challenges by providing Mitsubishi Rayon (Shanghai) Co. with functions to develop and promote risk management plans.

#### **Business Continuity Plan (BCP)**

Activities relating to an initial response (crisis management) plan and a business continuity plan (BCP) to prepare for a huge earthquake directly hitting the Tokyo metropolitan area and a major Nankai Trough earthquake

In order to prepare for a situation where the functions of the Head Office are lost because a huge earthquake hits the Tokyo metropolitan area or a situation where the functions of production centers and other offices located in the part of Japan that is west of Shizuoka Prefecture are lost because a major Nankai Trough earthquake occurs, we have developed a crisis management plan to secure the

safety of employees and a BCP-related basic action program covering all departments, etc., of the Mitsubishi Rayon Group.

Under the BCP-related basic action program, each department of Mitsubishi Rayon has separately assigned a supporting department that will take over its operations in case it is hit by an earthquake. After a BCP is implemented, supporting departments in each area will voluntarily launch support operations and will provide business continuity support until the earthquake-stricken departments restore their operations. Through these activities, we aim to restore the lost functions as fast as possible.

# Chronological Order and Business Activity Level

Changes in business activity level



Chronological order

\*The green line indicates the fastest possible restoration of pre-earthquake operations.

## Crisis management training

We periodically provide crisis management training simulating a situation where a huge earthquake directly hits the Tokyo metropolitan area or a major Nankai Trough earthquake occurs during work hours. If challenges are discovered and clarified through training, they are incorporated in the next crisis management plan (the revised edition), aiming to improve its effectiveness.

#### BCP training

We periodically provide BCP training simulating a situation where a huge earthquake directly hits the Tokyo metropolitan area, based on cooperation among supporting departments for the Osaka Branch, the Toyohashi Production Center, the Toyama Production Center, the Otake Production Center, and the Sakaide Production Center, departments at the Head Office (which is assumed to be damaged by the earthquake), and the Otake Crisis Control Center.

In the training, a responsible person at a supporting department confirms failure of the functions of the Head Office in Tokyo due to an earthquake, implements a BCP, and instructs a person in charge to begin support operations. Subsequently, the person in charge at the supporting department notifies a client (in the training, a department in charge at the Head Office acts as a client) of the taking over of operations by the supporting department, carries out shipment and other operations on behalf of the Head Office, and enters the results of these operations into an in-house "database for a huge earthquake hitting the Tokyo metropolitan area." Then, the responsible person at the supporting department reports the results of these operations, which are carried out on behalf of the Head Office under the BCP, to the Otake Crisis Control Center, and a person in charge of public relations at the Osaka Branch provides information to outside parties through the website.

Meanwhile, to prepare for a major Nankai Trough earthquake, the Otake Production Center, the Toyohashi Production Center, and the Yokohama Production Center are eagerly examining BCP-related training programs by carrying out activities such as determining the level of anticipated damage in each area and creating BCP-related manuals. Mitsubishi Rayon BCP System

→ Information flow → Telephone notification



### Distribution of handbooks

We have created a handbook describing basic actions to be taken if a huge earthquake occurs and distributed it to all employees of the Mitsubishi Rayon Group. (The first edition was published in October 2014.)

#### Challenges under review

Improvement of the effectiveness of the crisis management plan and the BCP in order to prepare for a huge earthquake directly hitting the Tokyo metropolitan area

Establishment of a crisis management plan and a BCP at each production center in order to prepare for a major Nankai Trough earthquake

# **Information Security**

The Mitsubishi Rayon Group established its Information Security Policy in fiscal 2004 and is undertaking activities centered on the Information Security Committee to increase information security. From the perspective of internal control (J-SOX), the Group inspected mobile devices and tightened control of information access rights in fiscal 2009. The Group has expanded the application of improved physical security measures in areas such as facilities, equipment and devices, with the use of IC cards<sup>%1</sup> called PIAS<sup>%2</sup>. We will continue to promote PDCA cycles to reinforce information security activities.

%1 IC card: A card mounted with integrated circuits (ICs) for data storage and computation

%2 PIAS: Physical Security Integrated Admission System, the Mitsubishi Rayon Group's unified access control system